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GOVERNMENT OF ONTARIO
ANALYTICAL LABORATORIES COUNCIL

1992 INDEX OF ANALYTICAL LABORATORIES AND CONTACT POINTS

FOR THE MINISTRIES OF:

HEALTH
LABOUR
ENVIRONMENT
TRANSPORTATION
SOLICITOR GENERAL
NATURAL RESOURCES
AGRICULTURE AND FOOD
NORTHERN DEVELOPMENT AND MINES

AND FOR:

ONTARIO HYDRO
THE LIQUOR CONTROL BOARD OF ONTARIO

GOVERNMENT OF ONTARIO
ANALYTICAL LABORATORIES COUNCIL

1992 INDEX OF ANALYTICAL LABORATORIES AND CONTACT POINTS

A compilation of Ontario Public Sector Analytical Laboratories, complemented by a database of contact points allowing direct access to specialist knowledge.

PUBLISHED BY
THE ANALYTICAL LABORATORIES COUNCIL
ISBN 0-7729-9647-4

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INTRODUCTION

The 1989 Report on the Review of Ontario Government Laboratories recommended that a "Combined Index of (Ontario) Government Laboratories" be published as a means to promoting improved interministry communications among government laboratory directors and staff. This publication has been produced by the Analytical Laboratories Council in response to that recommendation. It goes beyond the original recommendation by including information on the laboratories of two crown corporations, Ontario Hydro and the Liquor Control Board of Ontario. A listing of Analytical Laboratory Council members is also included.

ORGANIZATION

The "Index" is in two parts. Part I is a compilation of Ontario Public Sector analytical laboratories. It provides primary contact information and an overview of each laboratory according to: Activity, History, Staff & Organization, Facilities & Equipment, Documentation, Areas of Special Expertise, and Principal Clients.

Part II is in the form of a database. It provides in-depth contact information by Ministry, Area of Specialisation, Analytical Technique (or Target), as well as by the name of principal investigators. Part II is available on 'floppy diskette' as a *LOTUS 123 ® Database Table*, allowing users to sort or search the data fields as required; it was compiled by Peter Campbell, Ministry of the Environment as an initiative of the Council's Joint Projects Committee.

PURPOSE

The Index is intended to provide members of the Government of Ontario Analytical Laboratory System (GOALS) with a resource document, allowing them to understand the role of individual laboratories and to gain access to specialist knowledge within these laboratories. The Council believes that the Index may also serve as a valuable resource for a wider audience, including other levels of government, the broader public sector, universities, industry and many client groups. This "first edition" of the Index has been developed from a working draft released in 1991.

Every effort has been made to ensure that information is current as of April 1992. However, staff and program changes cause the compilation of information from eight ministries, two crown corporations, and over forty laboratories to become dated.

Users of the Index are therefore urged to record details of all errors, inconsistencies and omissions and to forward them to the Editor for inclusion in the subsequent printing of the Index. A form is included on the last page for comments.

Dr. Chris Riddle, Editor
April 1992

ANALYTICAL LABORATORIES COUNCIL
(As of March 1992)

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	Dr. P.C. Lightfoot, A/Chief Geoscience Laboratories Ontario Geological Survey
MINISTRY OF TRANSPORTATION:	Mr. R.P. Northwood, Manager Engineering Materials Office
	Mr. W.J. Komarnicki, Head Chemicals Section
ONTARIO HYDRO:	Dr. Michael Booth, Head Analytical Services Section

MINISTRY OF AGRICULTURE AND FOOD

The Ministry operates three laboratories in Guelph and a number of regional laboratories. In Guelph an expanded Agriculture and Food Laboratory Services Complex is under construction and scheduled for completion in 1992. The complex will consist of the existing Central Milk Testing Laboratory, an expanded Pesticide Residue Testing Laboratory, a Food Chemistry Laboratory, A Food Microbiology Laboratory, a Pest Diagnostic Laboratory (Plant Diseases), a Veterinary Toxicology Laboratory, an Organoleptic Laboratory, and a Communications unit. The Central Veterinary Services Branch is located in Guelph and Regional veterinary laboratory services are provided in New Liskeard, Kemptville, Brighton, Huron Park, and Ridgetown. The Horticultural Research Institute of Ontario, in Vineland Station includes a Horticultural Experiment Station and a Products Laboratory. A second Horticulture Experiment Station is located in Simcoe.

CENTRAL MILK TESTING LABORATORY

DAIRY INSPECTION BRANCH
LABORATORY AND INSPECTION SERVICES DIVISION
MINISTRY OF AGRICULTURE AND FOOD
95 STONE ROAD WEST, GUELPH, ONTARIO N1G 2Z4

PHONE: (519) 836-5121 FAX: (519) 836-7109

MANAGER: Dr. Les Szijarto

ACTIVITY

The Central Milk Testing Laboratory (CMTL) is mandated through the Milk Act of Ontario to provide milk producers, milk processors, and the public with valuable information through the expert analysis of milk and dairy products. This information relates to the commercial value, nutritional composition, and the safety and quality of the commodity.

HISTORY

The laboratory was established in 1967 to provide a facility for the impartial analysis of milk for milk-fat, protein, and carbohydrate composition of milk originating from the farms of all Ontario milk producers. The results obtained from this testing were used to determine the commercial value of milk from individual farms being sold to processors in the province.

In 1969, when the laboratory became fully operational, there were 26,000 dairy farms in the Province. With the advent of larger, more efficient operations, the number of producers has declined to approximately 8,800 active dairy farms in 1992.

Over the years, the responsibilities of the Laboratory have changed to include testing of producers' milk for microbiological quality, testing of packaged fluid milk, and the testing of butter and oleomargarine. Early in 1985 the CMTL moved into its current facility, performing these duties using state-of-the-art analytical and data processing equipment.

STAFF AND ORGANIZATION

The CMTL has a staff of 40. Administration is divided into Sample Transportation, Compositional and Microbiological Analysis, and Data Processing Sections. The Sample Transportation Section consists of a staff of 8 drivers. Using refrigerated vehicles, approximately 135,000 milk producer samples from virtually all regions of the Province are transported into the laboratory every month. A team of 23 scientists and technicians analyze some 60,000 randomly selected samples each month. These milk samples are analyzed for composition and microbiological quality using a combination of electronic analytical equipment and classical analytical techniques.

The data generated by the Analytical Section are recorded, stored and transmitted, using interfaced data processing equipment, by a staff of two data processing technicians.

Overall, supervising responsibilities are carried out by a laboratory manager, two supervisors, and a support staff of three.

FACILITIES AND EQUIPMENT

The CMTL is located on a 10 hectare parcel of land owned by the Ministry adjacent to the University of Guelph. The building, erected in 1984, is a single level structure of 1,525 m^2. It incorporates up-to-date energy efficient construction technology with a functional interior design.

Analytical functions are performed by a variety of instrumental methods:

- Microbiological instrumental methods for the determination of total bacteria, somatic cells, antibiotic residues, and specific microorganisms.
- Mid- and Near-Infrared Spectrophotometers specially designed for the analysis of milk components.
- High Performance- and Gas Liquid- Chromatography are used for a variety of functions including, analysis of fats and oils, and milk for inhibitor residues.
- Wet chemical procedures and equipment for quantitative analysis of milk compounds.

AREAS OF SPECIAL EXPERTISE

The CMTL is recognized for:

- Its expertise in the analysis of large numbers of routine compositional and microbiological samples using automated and computerized procedures.
- Identification and quantification of antibiotic residues in milk.
- Detection of adulteration of butter, and characterization of edible fats and oils.
- Provision of the Dairy Industry in Canada and the US with accurate reference milk standards for the calibration of analytical instrumentation.

PRINCIPAL CLIENTS

- Ontario Milk Producers and Processors
- Dairy Inspection Branch

VETERINARY LABORATORY SERVICES BRANCH

LABORATORY AND INSPECTION SERVICES DIVISION
MINISTRY OF AGRICULTURE AND FOOD
GUELPH AGRICULTURE CENTRE, PO BOX 1030, GUELPH, ONTARIO N1H 6N1

PHONE: (519) 837-5081 FAX: (519) 767-0015

DIRECTOR: Dr. Jim Henry

ACTIVITY

The six laboratories of this Branch provide diagnostic, investigative and consultative services to the livestock industry and to the veterinary profession.

Carcasses and specimens from animals and poultry are submitted to the laboratories to determine the cause of a disease or production problem. The Branch also offers laboratory and consultative services to the Animal Industry Branch, the Livestock Inspection Branch, and other branches within the Ministry.

Tests are performed on a fee for service basis.

STAFF AND ORGANIZATION

The Branch has 110 permanent staff, including 28 veterinary scientists and 1 scientist who specializes in mycoplasma. The remainder of the staff provide technical and clients support.

There are 6 veterinary laboratories across the Province, with the Guelph Laboratory serving as the reference laboratory and provider of specialized procedures such as virology.

GUELPH LABORATORY

PO BOX 3612, GUELPH, ONTARIO N1H 6R8

PHONE: (519) 823-8800 ext. 4510 FAX: (519) 821-8072

LABORATORY HEAD: Dr. Gwen Zellen

REGIONAL LABORATORIES

BRIGHTON LABORATORY
95 DUNDAS STREET, BRIGHTON, ONTARIO K0K 1H0
PHONE: (613) 475-1632 FAX: (613) 475-3835
LABORATORY HEAD: Dr. Doug E. Galt

HURON PARK LABORATORY
BLDG. 13, NOVA SCOTIA AVENUE, HURON PARK, ONTARIO N0M 1Y0
PHONE: (519) 228-6691 FAX: (519) 228-6446
LABORATORY HEAD: Dr. Gaylan K. Josephson

KEMPTVILLE LABORATORY
KEMPTVILLE, ONTARIO K0G 1J0
PHONE: (613) 258-8320 FAX: (613) 258-8324
LABORATORY HEAD: Dr. Dan Stevenson

NEW LISKEARD LABORATORY
NEW LISKEARD, ONTARIO P0J 1P0
PHONE: (705) 647-6719 FAX: (705) 647-6297
LABORATORY HEAD: Dr. Shelagh Copeland

RIDGETOWN LABORATORY
RIDGETOWN, ONTARIO N0P 2C0
PHONE: (519) 674-5456 FAX: (519) 674-3149
LABORATORY HEAD Dr. Jiggs Gough

FACILITIES AND EQUIPMENT

At each of the laboratory locations there are the personnel, the equipment, and the technology to assist veterinary practitioners and livestock and poultry producers with disease and management problems. Each veterinary laboratory is an important centre for coordinating control of livestock and poultry diseases.

In 1990/91 approximately 426,000 specimens were processed. Test procedures carried out on these specimens range from a routine examination of blood, requiring a few minutes, to the isolation of a new, or previously unidentified, micro-organism involving a series of tests carried out over a long period of time. Laboratory test procedures are available to identify a wide variety of disease conditions affecting all species of animals and birds, including food producing, fur bearing and companion pets. The staff, regardless of laboratory location, cooperate to provide service to animal owners and veterinarians.

Because of the increasing move to more intensive agriculture and the fact that new disease conditions appear from time to time in all species of animals, it is important that the cause of the disease condition be established so that action can be taken to control the infection, toxic, or metabolic problem.

A mainframe computer system allows specimens to be tracked from the five regional laboratories to the central reference laboratory and within the central laboratory to geographically isolated specialty laboratories. The system facilitates electronic data transfer directly to the clients.

DOCUMENTATION

The VLS User's Guide lists many of the tests available and the associated fees.

AREAS OF SPECIAL EXPERTISE

The laboratories are equipped to carry out diagnostic tests in:

- microbiology (including bacteriology; mycology; mycoplasma; virology; and serology)
- clinical pathology (including hematology; biochemistry; urinalysis; and cytology)
- gross pathology
- parasitology, and
- histopathology.

PRINCIPAL CLIENTS

- Veterinary Practitioners
- Livestock Producers
- Owners of Companion Animals
- Feed Industry
- Animal Industry and Livestock Inspection Branches (MAF); Ministry of Health
- University of Guelph
- Humane Societies
- Police

AGRICULTURAL AND FOOD LABORATORY SERVICES CENTRE
NEW INITIATIVES
CURRENTLY UNDER CONSTRUCTION IN GUELPH

AGRICULTURAL AND FOOD LABORATORY SERVICES BRANCH
LABORATORY AND INSPECTION SERVICES DIVISION
FOOD CHEMISTRY LABORATORY
FOOD MICROBIOLOGY LABORATORY
ORGANOLEPTIC ANALYSIS LABORATORY
PESTICIDE RESIDUE TESTING LABORATORY
THE PEST DIAGNOSTIC AND ADVISORY CLINIC

PHONE: (519) 837-5012 FAX: (519) 767-0060

DIRECTOR: Dr. Jim Pettit

PLANNED ACTIVITIES

Food Chemistry Laboratory

The main laboratory functions will relate to the chemical, biochemical, and physical analysis of foods, food ingredients, and other agricultural commodities - both raw and processed. These functions include:

- nutritional analysis and vitamin levels
- chemical analysis to determine composition, e.g. water, fats, starch, sugar
- protein, fats, and carbohydrate analysis
- physical examination of food for firmness, weight and packing integrity
- antibiotic analysis (screening)

Food Microbiology Laboratory

The main laboratory functions will relate to the microbiological analysis of foods, food ingredients, and other agricultural products - both raw and processed. Analysis will include monitoring for bacteria and mould. These tests will concentrate on both spoilage and disease-producing organisms. The Chief Microbiologist is Dr. John Lynch (519) 837-5022.

Organoleptic Analysis Laboratory

Main laboratory functions will relate to the examination of taste, odour, colour, appearance and other physical characteristics of food and food ingredients - both raw and processed. The scope of the testing programs will include:

- fruit and fruit products
- sugar, syrup and starch products
- cereal products
- fish and marine products
- beverage products
- vegetables and vegetable products
- meat, poultry and game
- eggs and egg products
- oil seed products
- dairy products.

The flexibility of the Food Quality and Safety Laboratory will be an essential consideration, in view of increased consumer awareness concerning health, nutritional and environmental issues.

PESTICIDE RESIDUE TESTING LABORATORY

BLDG.43, McGILVRAY STREET, UNIVERSITY OF GUELPH, GUELPH, ONTARIO N1G 2W1

PHONE: (519) 823-8800 EXT.4825 FAX: (519) 821-8072

CHIEF CHEMIST: Dr. B. Ripley

ACTIVITY

The laboratory serves as a centre of expert analysis for pesticide residues and other trace chemicals and contaminants in all classes of media, including food, feed, animal and vegetable tissues, soil, water, wildlife, and human tissues. The laboratory maintains a database of analytical and toxicological information relating to pesticides and pollutants and assists clientele in the interpretation of residue data.

HISTORY

The laboratory began operations in 1967 with a staff of two and was located in the Crop Science building at the University of Guelph. The laboratory moved in 1969 to its current location.

STAFF AND ORGANIZATION

The laboratory has a permanent staff of 17, consisting of 5 scientists, 10 technicians, and 2 clerical/secretarial staff. The laboratory conducts research, method development, and various monitoring and surveillance programs. Provincial Acts and Regulations are supported by the laboratory through investigational and regulatory programs. Analytical services are also provided to other ministries and the Agri-food community as required.

FACILITIES AND EQUIPMENT

The laboratory occupies a 350 m^2 facility in the basement of a building shared with the Veterinary Laboratory Services Branch, located on the University of Guelph campus. The laboratory is divided into sections which include: Fungicides; Herbicides; Insecticides; Pollutants; and Trace Metals. Residue analyses are conducted on all types of matrices for a wide variety and number of parameters. The prime method used for detection and confirmation of residues is gas chromatography using selective detectors which include: ECD, N/P, FPD, ELCD, and MSDs. High pressure liquid chromatography is also available using UV/VIS and fluorescence detectors. Trace metals and elements are identified by atomic absorption spectroscopy using flame and graphite furnace techniques. Water quality is determined by monitoring selected anions and cations using ion chromatography.

The laboratory will move into the new Agricultural and Food Laboratory Services Centre in 1992.

DOCUMENTATION

The laboratory publishes analytical data and methods in journals, internal documents, and ministry reports. A current listing is available from the Branch.

AREAS OF SPECIAL EXPERTISE

The laboratory has extensive expertise in trace organic analysis of pesticide residues, metabolites, heavy metals, elements, and environmental pollutants.

Areas of particular expertise include:

- Pesticide Residues (herbicides, fungicides, insecticides) in soil, water, and plant material
- Pollutants (PCBs, PCPs) in various matrices
- Trace metals/elements in soil, water, and plant material
- Selected inorganic ions in water
- Antibiotics/sulpha drugs in animal tissue/milk
- Methods development/evaluation
- Persistence/dissipation studies on pesticides
- Human exposure/re-entry studies
- Food and food quality projects; culinary practices
- Soil, water, and waste management projects

PRINCIPAL CLIENTS

- Laboratory and Inspection Services Division
- Other ministry branches
- Other Government of Ontario ministries, Ontario Hydro
- University of Guelph
- Agriculture Canada
- Wineries, Distilleries
- Farmers, Food Industry
- Ontario Flue-Cured Tobacco Marketing Board

THE PEST DIAGNOSTIC AND ADVISORY CLINIC

DEPARTMENT OF ENVIRONMENTAL BIOLOGY, UNIVERSITY OF GUELPH
GUELPH, ONTARIO N1G 2W1

PHONE: (519) 824-4120 ext. 2700 FAX: (519) 837-0442

MANAGER: Marilyn D. Dykstra

ACTIVITY

The Pest Diagnostic and Advisory Clinic (PDAC) provides diagnostic and identification services of plant disease, insect, weed, mushrooms, poisonous plants and other pest problems. It also provides up-to-date information on pesticides and other means of pest control, to the general public, farmers and agricultural industries, educational and government agencies, and private businesses. In addition, the PDAC identifies plants submitted under the Ontario Weed Alert program and tests selected plant specimens for susceptibility to triazine herbicides.

The PDAC fulfils these functions by providing specimen diagnoses, answering telephone and letter inquiries, lecturing in selected University of Guelph courses, giving extension talks, workshops, and preparing and distributing factsheets concerning pest problems.

HISTORY

The PDAC was established in 1978 because of increased demands from the public, agriculture, and industry for reliable information about pests and pest control. Although this information had previously been provided by various departments within the Ontario Agricultural College, University of Guelph, the establishment of the PDAC enabled the consolidation of expertise, resources, and services, which resulted in several advantages. The establishment of the PDAC alleviated demands on both university faculty and MAF staff. The PDAC now provides a mechanism for monitoring new and emerging pest problems in the province. In addition it is a unique educational facility which teaches diagnostics to both students and industry, helping to integrate the various aspects of agriculture, pests, and pest control. The PDAC has also, over the years, developed a large collection of information and library, with respect to pests and pest controls, an invaluable resource for faculty, students, and the public.

STAFF AND ORGANIZATION

The PDAC is a service program funded by the Ministry and operated by the Department of Environmental Biology, University of Guelph. The PDAC currently has two permanent staff.

FACILITIES AND EQUIPMENT

The PDAC moved into the third floor of the Federal building located at 620 Gordon Street in April 1991, relocating to the new Agricultural and Food Laboratory Services Centre in 1992 as part of the Agricultural and Food Laboratory Services Branch.

The laboratory is set up to handle specimen diagnostics by means of microscopic examination, culture on agar media, and other microbiological techniques required to identify fungi, bacteria, and other plant pathogens. The PDAC also maintains a small herbarium of weeds and plant diseases, an insect collection, and a photographic slide collection for reference, teaching, and display purposes.

DOCUMENTATION

To facilitate responses to clients some 130 Clinic circulars on pests and diseases of a variety of plants such as ornamentals, vegetables, fruits, field crops etc., as well as Circulars concerning household and stored product pests and miscellaneous insects, have been prepared by staff.

The PDAC also maintains a collection of MAF factsheets and Ministry of the Environment publications on pests and pest control.

AREAS OF SPECIAL EXPERTISE

PDAC staff have extensive experience in the identification and diagnoses of a broad range of pest and disease problems of ornamentals, fruits, turfgrass, vegetables, field crops, and other plants, and the identification of insects, mites, spiders, weeds, mushrooms, and in pest control.

HORTICULTURAL PRODUCTS LABORATORY
HORTICULTURAL RESEARCH INSTITUTE OF ONTARIO
MINISTRY OF AGRICULTURE AND FOOD
4890 VICTORIA AVE. N., BOX 7000, VINELAND STATION, ONTARIO L0R 2E0

PHONE: (416) 562-4141 FAX: (416) 562-3413

DIRECTOR: Dr. Frank C. Eady

ACTIVITY

The Horticultural Products Laboratory conducts applied research on post-harvest physiology and storage as well as processing utilization of Ontario-grown fruits and vegetables.

HISTORY

The laboratory was established in 1951 in order to provide a provincial resource base to conduct research on the quality as well as storage and processing characteristics of Ontario-grown fruits and vegetables. Through its history, the laboratory has regularly interfaced with various sectors of Ontario's fruit and vegetable production and processing industries.

STAFF AND ORGANIZATION

The permanent staff of 11 is divided into two activity sections: Post-harvest Physiology and Storage; and, Processing and Utilization. The laboratory has expertise in post-harvest physiology, biochemistry, food science, and engineering.

FACILITIES AND EQUIPMENT

The Storage Research section deals with a variety of Ontario-grown fruit and vegetable commodities. Facilities include storage rooms, air cooling, hydro cooling, respiration rooms, and a post-harvest physiology laboratory.

The Utilization section consists of a processing area, food science laboratory, and a biochemistry laboratory. Overall analytical capabilities are geared to evaluate various chemical and/or physical attributes of fruit and vegetable commodities and their products.

Analytical methodology includes HPLC, GC, spectrophotometry, refractometry, Hunter meter colorimetry, gravimetry, infra-red analyzer, fluorometry, paramagnetics, texture meter, and organoleptic analysis.

DOCUMENTATION

A bibliography of research publications and reports is published annually in the "Report of the Agriculture Research Institute of Ontario".

AREAS OF SPECIAL EXPERTISE

The facility has experience and resources in the areas of:

- post-harvest physiology of various fruits and vegetables, including controlled-atmosphere and modified atmosphere storage
- post-harvest value added utilization techniques
- chemical, physical, organoleptic assessment of quality attributes of fresh and processed commodities.

MINISTRY OF CONSUMER AND COMMERCIAL RELATIONS

Reporting to the Ministry, the Liquor Control Board of Ontario, a crown corporation, operates a Quality Assurance Laboratory. The laboratory is located in downtown Toronto.

QUALITY ASSURANCE LABORATORY
LIQUOR CONTROL BOARD OF ONTARIO
55 LAKESHORE BOULEVARD EAST, TORONTO, ONTARIO M5E 1A4

PHONE: (416) 864-6724 FAX: (416) 365-5911

DIRECTOR: Mr. Alex Karumanchiri

ACTIVITY

The LCBO Laboratory assures, through chemical analyses, that all beverage alcohol products sold in Ontario are in compliance with Federal Food and Drug Acts and Regulations, Packaging and Labelling Acts, Liquor Control Acts and Liquor Licence Acts. The Laboratory serves a wide range of customers, such as LCBO's Category Managers, Private Stock importations department, Manufacturers or Suppliers, Police, Liquor Licence Inspectors, and the general public.

HISTORY

The LCBO Laboratory was established in 1956 to assure the quality of two- to three-hundred brands of products listed by the Board. Currently the LCBO brings in around 8,000 brands of beverage alcohol products for sale in Ontario. All products are tested in the laboratory prior to release. To meet this increasing need, a new state-of-the-art analytical laboratory, triple the original size, was designed and constructed on the same premises in 1989.

STAFF AND ORGANIZATION

The laboratory has a permanent staff of 15 working in two Sections, each with a Manager. The General Chemistry Section looks at trace metal contaminants, food additives and natural components and byproducts. The Organic/Research Section looks at organic contaminants, such as agri-chemicals and their metabolites, and illegal additives. Both Managers report to the Director of Quality Assurance. On an ongoing basis, considerable analytical research activity is conducted at the Laboratory. Practically all methodologies used in the Laboratory are developed in-house.

FACILITIES AND EQUIPMENT

The Laboratories occupy some 1,000 m^2 in the Head Office complex of the LCBO in downtown Toronto.

A comprehensive range of analytical instrumentation is used in the Laboratory.

In General Chemistry the equipment includes:

Atomic Absorption (flame, graphite furnace, hydride); Technicon Auto-analyzers; High Pressure Liquid Chromatographs (Programmable Variable Wavelength Detectors, Electro-chemical Detectors); Digesters; Paar Density Meter.

In Organic/Research the equipment includes:

Gas Chromatographs (FID, NPD, Hall Electrolytic Conductivity); Liquid Chromatographs; Variable Wavelength, Fluorescence, Infrared Spectrometers; GC-MS; Liquid- and Solid-phase extraction equipment; Rotary Evaporators.

A Laboratory Information Management System, custom designed by Applied Systems Management Inc., is used to manage all aspects of the Laboratory operation.

AREAS OF SPECIAL EXPERTISE

The Laboratory has an established reputation in research and testing of contaminants and controlled substances in all types of beverage alcohol. Areas of particular expertise include:

- Determination of trace metals in beverage alcohol:

Fe, Cu, Co, Cd	by flame AA
Pb, Al	by graphite furnace AA
As, Se	by hydride AA

- Determination of Food Colours (dyes), both legal and illegal, by HPLC UV/VIS detection
- Determination of Food Additives, and natural components such as sugars, Volatile Acid, Sulphur Dioxide (Total and Free), CN, Sorbic Acid, by continuous flow analysis
- Determination of Methanol, Fusel Oils, and Ethanol by GC
- Determination of N-DMNA by GC-MS
- Determination of illegal flavourings, Asarone, Thujone, coumarin, Methyl Anthranalate by GC-MS
- Determination of agricultural chemical residues, and their metabolites, by GC-Hall, GC-NPD, and GC-MS.

PRINCIPAL CLIENTS

- LCBO Product Division, Legal Department, LLBO Legal Department
- Wineries, Breweries, Distilleries
- Wine and Spirit Agents, Licensees
- Police

MINISTRY OF NORTHERN DEVELOPMENT & MINES

The Ministry has two laboratories. The Geoscience Laboratories, located in Toronto, operates as a Section of the Ontario Geological Survey in the Ministry's Mines and Minerals Division. The Temiskaming Testing Laboratory, located in Cobalt, operates within the Division's Northeast Region, managed from Timmins.

The Ministry is in the process of relocating its Toronto Offices to Sudbury. The Geoscience Laboratories' new facility will be located in the Mines and Minerals Research Centre on the campus of Laurentian University and is scheduled for occupancy in 1992.

The Ministry partially funds, and derives support from, the Jack Slatterly Geochronology Laboratory at the Royal Ontario Museum.

GEOSCIENCE LABORATORIES
ONTARIO GEOLOGICAL SURVEY
MINES AND MINERALS DIVISION
MINISTRY OF NORTHERN DEVELOPMENT AND MINES
77 GRENVILLE STREET, TORONTO, ONTARIO M7A 1W4

PHONE: (416) 965-1337/1370 FAX: (416) 963-3983

CHIEF ANALYST: Dr. P.C. Lightfoot (Acting)

ACTIVITY

The Geoscience Laboratories' principal function is to provide laboratory support services to the Ontario Geological Survey and to other areas of the Mines and Minerals Division's Mineral Resource Program. The Geoscience Laboratories also provides limited services to prospectors and developers in the form of assays and mineral evaluations.

HISTORY

A Provincial Assay Office was first established in Belleville in 1898 to serve prospectors working in Hastings County. Early in the 1900s the facility moved to the Parliament Buildings in Toronto and became part of the Ontario Department of Mines.

In 1972, a major reorganization saw the laboratory expand to become the Mineral Research Branch of the Ministry of Natural Resources. In 1978 the Branch received its present name, the Geoscience Laboratories, when it combined with the Geological Branch to form the Ontario Geological Survey. In 1985 the OGS was transferred to the Ministry of Northern Development and Mines.

STAFF AND ORGANIZATION

The Geoscience Laboratories has a permanent staff of 23 working in two general areas: Mineral Sciences; and Elemental Analysis. In addition, the Office of the Chief Analyst performs administrative, quality control, data management, and archival functions.

The OGS is a research organization and the Laboratories' capabilities reflect this role. In addition to providing analytical determinations in support of geological projects, the Laboratories maintain a comprehensive research and development program in a variety of geoanalytical areas.

FACILITIES AND EQUIPMENT

The Laboratories occupy a 1,000 m^2 facility in downtown Toronto, with additional off-site archival rock storage.

A comprehensive range of geoanalytical laboratory equipment is used. This is listed according to function:

1. Sample Preparation
   Rock crushers, grinders, pulverizers; Sieving equipment; Rock cutting and polishing equipment; Freeze Dryer; Thin and polished sectioning equipment; Robotic (acid) digestion system; Automated fluxing and fusing equipment; Sample pressing equipment.
2. Mineral Sciences
   Fire assay facility; Particle size analyzer; Atterberg equipment; Magnetic separator; X-Ray Diffraction system; Optical microscopes.
3. Elemental Analysis
   In addition to a small, conventional wet-chemistry laboratory, the following spectrometer systems are in use: X-Ray Fluorescence, Inductively-Coupled Plasma Optical Emission, Inductively Coupled Plasma Mass, Atomic Absorption (flame, furnace, hydride), Infra red (dedicated systems for C, S, OH), Colorimeter, Coulometer.

DOCUMENTATION

The Laboratories operational publications include:

1. The Analysis of Geological Materials:
   Volume I: A Practical Guide
   Volume II: A Manual of Methods
   OGS Miscellaneous Publication 149 (1990-91)
2. Analytical Capabilities and Services (1989)
3. An Introductory Guide to Sampling for Geoanalysis (1991)
4. Safety Manual (1990)
5. Quality Assurance Manual (in preparation)

AREAS OF SPECIAL EXPERTISE

The Laboratories have extensive experience in the mineralogical and elemental analysis of geological materials (rocks, soils, waters, vegetation, peat). Areas of particular expertise include:

- The determination of gold and silver in rocks
- Mineral identification
- The determination of the rare earth elements at ultra trace levels
- The determination of the 'hydride' elements As, Sb, Se, Sn, Bi.
- Trace element determination by XRF spectroscopy
- Laboratory design & Equipment evaluation
- Geostandards
- Assay laboratory evaluations (developing world)
- International programs/conference organization

PRINCIPAL CLIENTS

- Ontario Geological Survey
- Prospectors and Developers

TEMISKAMING TESTING LABORATORY

NORTHEAST REGION
MINES AND MINERALS DIVISION
MINISTRY OF NORTHERN DEVELOPMENT AND MINES
PRESLEY STREET, BOX 799, COBALT, ONTARIO P0J 1C0

PHONE: (705) 679-8313/8455 FAX: (705) 679-5584

MANAGER: Leo Owsiacki ACTING MANAGER: Jim Ireland

ACTIVITY

The Temiskaming Testing Laboratory offers assay and bulk sampling services to the exploration and mining industries.

HISTORY

The discovery of silver at Cobalt lead to the establishment of many small mines without milling, smelting or refining capabilities. Producers of ore had no way of ensuring representative sampling and accurate assaying of their product. This resulted in uncertainty in the fairness of payment received.

In 1909 two engineers, Campbell and Dyell, designed a bulk sampling facility that met the needs of the silver producers in Cobalt. The facility was privately run until 1917 when economic difficulties lead the provincial government to take over the operation, transferring it to the Ontario Department of Mines.

The original building was destroyed in 1941 causing the TTL to be reestablished in its present location.

STAFF AND ORGANIZATION

The permanent staff of 9 is divided between the bulk sampling facility and the assay laboratory.

FACILITIES AND EQUIPMENT

The bulk sampling facility, including the grinding mills, crushers and sampling plant, is located in the rear of the building throughout four floor levels. The three upper floors accommodate crushers, ball mills, vibrating screens, dust elevators, holding tanks, a service elevator, and a mechanical sampler. The receiving and shipping area, machine shop and bullion processing furnaces are located on the basement floor. The facility was designed to be able to handle samples arriving in railroad cars and transport trucks, and can process single samples ranging from 200 kg to 500 tons.

The assay laboratory uses conventional gravimetric fire assaying to determine gold and silver in rocks and ores. It is also equipped for atomic absorption spectrometric determination of a range of base metals and other ore-related elements such as arsenic.

DOCUMENTATION

The TTL publishes a Schedule of Bulk Sampling and Assaying Services.

AREAS OF SPECIAL EXPERTISE

The bulk sampling facility is believed to be unique in North America and has handled a variety of samples from Canada and the United States. In addition to gold and silver ores, the TTL has recently processed electronic scrap and catalytic converter cores to determine concentrations of silver, gold and other precious metals.

Special expertise exists in the areas of:

- O bulk sampling of ore-grade material, concentrates, metals, electronic scrap
- O custom crushing
- O bullion processing
- O custom and control sampling and assaying
- O fire assaying of ores for gold and silver, including umpire assays.

PRINCIPAL CLIENTS

- O Prospectors and Developers

JACK SLATTERLY GEOCHRONOLOGY LABORATORY

ROYAL ONTARIO MUSEUM
100 QUEEN'S PARK, TORONTO, ONTARIO M5S 2C6

PHONE: (416) 586-5812

CHIEF: Dr. Tom Krogh

ACTIVITY

This facility, operated by the Royal Ontario Museum, is dedicated to the dating of rocks, using U-Pb methods on rare mineral phases such as zircons. The age information provides valuable constraints on the relative timing of ore-forming processes, and the geological evolution of Ontario.

FACILITIES AND EQUIPMENT

U-Pb isotope dilution analyses are conducted in a clean laboratory on air abraded mineral phases. Samples are spiked with radioactive tracers and dissolved using steel-jacketed Teflon pressure vessels. A blank of less than 100 pg U and 40 pg Pb can be achieved, and rapid analysis is performed with a VG Sector variable multi-collector mass spectrometer. Data are plotted and interpreted by propagating all errors in order to obtain valid age information for the samples.

MINISTRY OF THE ENVIRONMENT

The Ministry operates a Central Laboratory in Toronto, with a field unit in Dorset, and Regional Laboratories in London, Kingston, and Thunder Bay.

LABORATORY SERVICES BRANCH
ENVIRONMENTAL SERVICES DIVISION
MINISTRY OF THE ENVIRONMENT
PO BOX 213, 125 RESOURCES ROAD, REXDALE, ONTARIO M9W 5L1

PHONE: (416) 235-5743 **FAX: (416) 235-5744**

DIRECTOR: Dr. Bern Schnyder
ASSISTANT DIRECTOR: Mr. S.P. Villard

ACTIVITY

As the analytical arm of the Ministry of the Environment, the Laboratory Services Branch has a mandate to develop and maintain a state-of-the-art environmental laboratory, dedicated to providing analytical excellence at all levels of support for Ontario's environmental protection programs.

This mandate requires the laboratory to be a centre of excellence which provides:

- High quality analytical services, including isolation, identification and measurement of environmental contaminants:
- A Reference Centre for environmental analyses;
- Expert consultation on environmental analysis;
- Research and Development for methodology enhancement/advancement.

HISTORY

The laboratory was first established in 1956 as the Laboratories and Research Division of the Ontario Water Resources Commission, with staff transferred from the Ontario Department of Health. The original mandate was mainly "water supply, sewage works, industrial and stream sanitation analysis".

In 1971 the Ontario Water Resources Commission became the Ministry of the Environment and an integrated Laboratory Services Branch was formed, encompassing all air, vegetation, and soils analyses, in addition to the existing drinking water, surface water, and sewage monitoring capability.

STAFF AND ORGANIZATION

The Toronto Laboratory has a permanent staff of approximately 250 and is organized into five sections, one administrative and four operational.

The Administration Section functions include: administrative support; contract administration for both routine and research and development work; library services; central stores; and health & safety.

The Drinking Water Organics Section provides analysis of organic chemicals in drinking, ground and surface water supplies and ultra toxic organic chemicals such as dioxin in water. There are four units in the Section. These are the Dioxin; Mass Spectrometry; Volatile Organics; and Organic Water Units.

The Inorganic Trace Contaminants Section is multi-functional and responsible for:

- Analysis of inorganic chemicals in a variety of matrices;
- Identification and characterization analysis of hazardous organic compounds in industrial wastes and landfill samples;
- Mobile on-site analytical support for environmental field work and emergencies;
- Coordinating support for legal sample analyses throughout the Branch.

There are seven units within the Section. These are the Industrial/Domestic Waste; Bio-materials/Flameless AAS; Air Emissions/Anions; Vegetation/Soils; Spectroscopy/Waters; Microscopy/Litigation; and Hazardous Waste Litigation Units.

The Trace Organics Section identifies and determines a wide variety of organic compounds of industrial and agricultural origin in all compartments of the environment. There are three analytical units within the Section. These are the Biota and Sediments; Air Monitoring; and Wastewater Units. The Section also supports the activities of the Quality Management Office which is responsible for quality assurance and quality control for all MOE laboratories.

The Water Quality and Laboratory Computer Systems Section conducts chemical and microbiological analyses on a wide range of sample types and maintains the Central Laboratory Information System. There are six units within the Water Quality Laboratory. These are the Colorimetry; Titration and Ion Chromatography; MISA, BOD & Solids; Surface & Wastewater Microbiology; Drinking Water Microbiology; and Dorset Laboratory & Atomic Absorption Units. The Laboratory Computer Systems Unit supports central and regional laboratory operations; operates, maintains, and enhances computer hardware and software; provides sample reception and data entry services; and produces management reports.

FACILITIES AND EQUIPMENT

The Central Laboratory occupies over 20,000 m^2 at the Resources Road complex.

The major analytical equipment includes:

Ion Chromatographs; Inductively-Coupled-Plasma -Optical-Emission and -Mass Spectrometers; Technicon Auto analyzers; Atomic Absorption Units; Titrators; Carbon Analyzers; Wavelength- and Energy-Dispersive X-Ray Fluorescence Spectrometers; Gas Chromatographs; High Resolution- and Quadrupole- Mass Spectrometers; GC/MS Detectors; Incubators; Microscopes; Scanning- and Transmission- Electron Microscopes; Particle Size Analyzers; and Calorimeters.

DOCUMENTATION

The Laboratory's operational publications include:

1. Laboratory Services Branch - Operational Outline (April 1990)
2. A Guide to the Collection and Submission of Samples for Laboratory Analysis (April 1989)
3. Laboratories Quality Management Plan (June 1990)
4. Code of Practice for Environmental Laboratories (September 1989)

AREAS OF SPECIAL EXPERTISE

The Ontario Environment Laboratory is considered to be one of the foremost environmental laboratories in North America. Key features are the wide ranging test capabilities, the high volume work output, and the low-level detection capabilities. Whether analysing for ultra-trace constituents in precipitation or dioxin isomers in fish, the laboratory has created a reputation for excellence in method development and routine analytical procedures. Current capacity enables the laboratory to handle a large number of matrices including air, water, wastewater, vegetation, biota, sediments and soils for several hundred organic and inorganic parameters.

The Laboratory acts as a reference centre for dioxin and furan analyses and carries out complex determinations of metals at ultra-trace levels, organics in biota, and electron microscopic identification of particulates.

PRINCIPAL CLIENTS

- Ministry of the Environment
- Other ministries

DORSET FIELD LABORATORY

WATER QUALITY SECTION
LABORATORY SERVICES BRANCH
BELLWOOD ACRES ROAD, DORSET, ONTARIO P0A 1E0

PHONE: (705) 766-2412 FAX: (705) 766-2254

SUPERVISOR: Ms. Anne Neary

ACTIVITY

Two laboratories in Dorset contribute data to the Acid Precipitation in Ontario Study (APIOS) for the Laboratory Services Branch. In one, precipitation, river and lake samples are analyzed for pH, alkalinity, dissolved oxygen, colour, conductivity, dissolved inorganic carbon, ammonia, total nitrates, total phosphorus, iron, manganese and certain trace metals in support of the Intensive Aquatic Studies Task of APIOS. In the second laboratory, soil samples are analyzed for more than 20 parameters in support of the Intensive Terrestrial Studies and Bio-geochemical Studies.

HISTORY

A small laboratory was established in Muskoka in 1976 for the analysis of water samples in support of MOE's Lakeshore Capacity Study. Later that year the laboratory moved to Paint Lake, near Dorset, Ontario. In 1979, the laboratory began to provide analytical support for MOE's APIOS program. The laboratory moved to its present site, on a different part of Paint Lake, in 1980. In 1986, a soils laboratory supporting the Terrestrial Effects part of the APIOS program moved from Toronto to Dorset and a "clean room" was built for the measurement of ultra low levels of trace metals by electrochemical methods. A second "clean room" was built in 1991 and much of the work was directed toward low level trace-metal analysis.

STAFF AND ORGANIZATION

The Dorset Field Laboratory has six fulltime staff.

FACILITIES AND EQUIPMENT

The major analytical equipment includes: Ion Chromatographs, Graphite furnace flameless atomic absorption spectrophotometers, a Flame atomic absorption spectrophotometer, Technicon auto-analyzers, Carbon analyzers, Anodic stripping voltameters, RO units, Automated titration systems, Digestion blocks, Autoclaves, Centrifuges, and Automated Flow-Colorimetric Systems.

DOCUMENTATION

The laboratory's operational documentation includes approved bench procedures for all soil and water tests and the APIOS Terrestrial Effects Procedures Manual. The laboratory conforms to all documented QA/QC protocols for the Water Quality Section in Toronto. Sample submission procedures for Dorset are also documented in an informal report for use by technicians performing sample reception duties.

AREAS OF SPECIAL EXPERTISE

- The analysis of soils for inorganic constituents
- Ultra-low-level trace metals analysis on surface water samples
- The analysis of soft water samples for parameters of interest to acid rain-related research, such as aluminum speciation, alkalinity, and low level fluoride and phosphorus.

REGIONAL LABORATORIES
OPERATIONS DIVISION - MINISTRY OF THE ENVIRONMENT

SOUTHWESTERN REGION

LONDON REGIONAL OFFICE - LABORATORY SERVICE

986 ADELAIDE STREET SOUTH, LONDON, ONTARIO N6E 1V3

PHONE: (519) 661-2266 FAX: (519) 661-1742

CHIEF: Dr. G.W. Cook

SOUTHEASTERN REGION

KINGSTON REGIONAL OFFICE - LABORATORY SERVICE

BOX 820, 133 DALTON AVENUE, KINGSTON, ONTARIO K7L 4X6

PHONE: (613) 549-4000 FAX: (613) 548-6908

CHIEF: Mr. S.E. MacBeth

NORTHWESTERN REGION

THUNDER BAY REGIONAL OFFICE - LABORATORY SERVICE

421 JAMES STREET SOUTH, THUNDER BAY, ONTARIO P7E 2V6

PHONE: (807) 475-1275 FAX: (807) 475-1756

MANAGER: Mr. J.D. Stasiuk

ACTIVITY

The Regional Laboratories provide analytical support in their respective regions for both local and provincial pollution abatement and environmental assessment programs. These laboratories are of major importance since they process high numbers of analyses, on perishable samples, on a highly automated, fast turn-around basis.

HISTORY

The Thunder Bay laboratory was established in 1969 under the Ontario Water Resources Commission, to overcome logistical problems in the northern regions. The laboratory moved to its present quarters in 1974 and now services the basic analytical requirements of both the Northeastern and Northwestern regions of the Ministry.

The Kingston laboratory was established in 1973 and moved to its current site in 1975. The purpose of this laboratory is to provide analyses for regional programs in the Southeastern Region.

The London laboratory was created as the London Great Lakes Laboratory in 1966 with the mandate of supporting International Joint Commission work in Lake Huron, Lake Erie and the inter-connecting waterways. The present London laboratory was opened in 1974 and serves the Southwestern Region.

STAFF AND ORGANIZATION

The Kingston, London and Thunder Bay laboratories have permanent staffs of 12, 18 and 20 respectively. All laboratories have Water Quality, Microbiology, and Inorganic analyses sections with some organic analyses facilities in London and Thunder Bay. Analytical output in 1991 was: Kingston (160,000); Thunder Bay (287,000); and London (300,000) pieces of data.

FACILITIES AND EQUIPMENT

The Kingston laboratory occupies 340 m^2, London 1020 m^2, and Thunder Bay 1830 m^2. All laboratories are highly automated in terms of titrimetric and colorimetric water quality analyses and also operate atomic absorption and ICP atomic emission spectrometers. Thunder Bay utilizes gas chromatography in its pesticide program and London operates gas chromatography/mass selective detector systems in its organic priority pollutant analyses section. Other equipment includes incubators, autoclaves, microscopes, and particle size counters.

DOCUMENTATION

The Toronto laboratory is the major source of corporate documentation detailing the procedures and policies of all ministry laboratories. In particular, the Toronto Laboratory Quality Management Office serves as the archive and distribution centre for all analytical methodology used both in the Toronto and Regional laboratories.

AREAS OF SPECIAL EXPERTISE

All laboratories are experienced in chemical and microbiological water quality analyses of a wide range of sample types including industrial wastes, potable water, sewage and surface waters. The Thunder Bay laboratory has a specific involvement in pesticides in fish analyses and the London laboratory in organic priority pollutant analysis. London also has considerable experience in the modelling of stream pollution, by agricultural waste spills, using antibiotic tracer bacteria.

MINISTRY OF HEALTH

The Laboratory Services Branch of the Ministry operates a Central Laboratory in Toronto and Regional Public Health Laboratories in Hamilton, Kingston, London, Orillia, Ottawa, Palmerston, Peterborough, Sault Ste Marie, Sudbury, Thunder Bay, Timmins, and Windsor. The Drug Programs Branch of the Ministry operates a Drug Testing Laboratory in Toronto.

CENTRAL LABORATORY
LABORATORY SERVICES BRANCH
HEALTH SYSTEM MANAGEMENT GROUP
MINISTRY OF HEALTH
81 RESOURCES ROAD, ETOBICOKE, ONTARIO M9P 3T1

PHONE: (416) 235-5952 (Reception) **FAX: (416) 235-6063**

DIRECTOR, LABORATORY SERVICES BRANCH: Dr. Helen Demshar

ACTIVITY

The Central Laboratory provides specialized diagnostic and reference services in microbiology on both a provincial and national basis. These services assist physicians, hospitals, regional public health units, private laboratories, affiliated departments within the Ministry and other ministries in the detection, diagnosis, treatment and prevention of disease.

More than 3 million clinical, environmental, and reference tests are performed annually in the investigation of bacterial, viral, parasitic, and mycotic diseases. In addition a neonatal screening program tests all newborns in the province for congenital hypothyroidism and phenylketonuria.

A major portion of the work is directly related to public health, assisting physicians, medical officers of health, and epidemiologists in the control of infectious diseases.

More than 60% of laboratory testing is associated with specialty and reference services.

In environmental bacteriology, tests are conducted on drinking water, bathing beach and swimming pool water, milk and food samples.

Applied research is carried out by staff members of the Laboratory Services Branch to strengthen the diagnostic and specialty services.

HISTORY

The Ontario Ministry of Health has provided public health laboratory services in the province since 1890, and is the second oldest public health laboratory on the North American continent.

In the early years, the laboratory was concerned with tests for rabies, diphtheria, tuberculosis, typhoid and the bacteriological testing of water and milk.

Over the years many advances in laboratory medicine were made: Wasserman test for syphilis (1917); blood sugar estimation for diabetes (1924); pathology tissue service (1930); culture for tuberculosis (1932); virus diagnostic laboratory (1941); mycology (1946); Treponema pallidum Immobilization (TPI) test for syphilis (1951); Rh Screening test (1954); Cytology Screen test (1965); PKU Screen test (1965); Serum Hepatitis Antigen testing (1970); Yersinia (1972); Rubella Prenatal Screening test (1972); Antibody Screening test (1973); Antibody Sub-typing (1975); Arbovirus Culture (1975); Direct Diagnosis of Enteric Viruses by Electron-microscopy (1975); Toxocara Serology (1975); Specific Transport Medium for Bordetella pertussis (1975); Legionnaire's Disease IFA test (1978); Neonatal Hypothyroid and Phenylketonuria Screening programs; and, more recently, serological tests for HIV and Lyme Disease.

These are only some of the services first offered by the Ontario Public Health Laboratory Service to practising physicians and hospitals in Ontario.

Laboratory services have been modified over the years to meet changing needs, such as the emergence of new diseases, the introduction to Ontario of diseases from other parts of the world, and the development of alternate testing facilities in the province. Services, such as tissue pathology, cytology, and routine biochemistry, have been discontinued and new services, such as testing for AIDS, Legionnaire's Disease, and Lyme Disease, have been added.

Much of the present day work of the Branch consists of serving private physicians caring for patients out of hospital or in hospitals with incomplete laboratory services; in support of the work of official public health programs; and in offering a reference service to physicians and hospital laboratories in the fields of bacteriology, virology, serology, parasitology, myco-bacteriology, and mycology.

The Branch operates as a laboratory system: tests not carried out in a Regional laboratory are referred promptly to another ministry laboratory or reference laboratory. All the Branch's laboratories participate in internal and external quality control and proficiency testing programs.

Branch staff have teaching cross appointments in Medical Faculties/Microbiology Departments of several universities in the province.

STAFF AND ORGANIZATION

The Central Laboratory has a permanent staff of approximately 330 working in seven operational areas: Clinical Bacteriology and Myco-bacteriology (TB); specialized Clinical Chemistry; Environmental Bacteriology; Mycology; Parasitology; Serology; and Virology.

Clinical Bacteriology & Myco-bacteriology (Dr. C. Krishnan (416) 235-5712)

The Clinical Bacteriology Section includes Diagnostic Bacteriology, Reference Bacteriology, Legionella Laboratory, Myco-bacteriology (TB) and a Research Unit. It provides direct testing in all of these areas and also acts as a provincial reference centre for identification, epidemiologic typing, toxigenicity, pathogenicity and antibiotic susceptibility testing of all bacteria including legionella, tubercle bacilli and gonococci. The National Reference Service for Yersinia and the Ontario Neonatal Screening Program for Phenylketonuria (PKU) are also located in Reference Bacteriology. There are three scientists in the section carrying out research and development in the newer methods of diagnosis of infections, bacterial toxin assay, epidemiologic typing and antibiotic susceptibility testing. Development of tests based on molecular biological techniques and bacterial genetics is a major objective in research. The Section is developing gene probe technology using polymerase chain reaction (PCR), anaerobe identification using gas liquid chromatography (Varian 3100), myco-bacterial identification using HPLC, and epidemiologic typing using many approaches including pyrolysis mass spectrometry.

Environmental Bacteriology (Mr. M. Brodsky (416) 235-5716)
Environmental Bacteriology offers a comprehensive analytical support service for provincial public health programs, as well as specialty and reference services for health units, physicians, hospitals and private laboratories. The Section also provides a direct service to the citizens of Ontario who require an assessment of the bacteriological potability of their well water. Environmental Bacteriology is a multi-disciplinary Section with expertise in the microbiology of potable and non-potable water, dairy products, food, environmental sanitation, and pharmaceuticals. In addition, the Section processes clinical specimens in food- and water- related investigations.

Nationally and internationally recognized reference services are provided for Clostridium perfringens enterotoxin detection and sero-typing, Staphylococcus aureus enterotoxin and toxic-shock toxin (TSST-1) and Clostridium botulinum neurotoxin detection.

Specialized Clinical Chemistry (Dr. H.P. Demshar (416) 235-5701)
The Clinical Chemistry Laboratory operates in two Sections: (1) Heavy Metals and Trace Elements Analysis; and (2) Newborn Screening test for Congenital Hypothyroidism (TSH test).

The Heavy Metals and Trace Elements Analysis Section determinations include Aluminum, Copper, Cadmium, Lead, Mercury, and Zinc. The majority of specimens tested are from the Children's Psychiatric Research Institute (CPRI) and hospitals. This Section also performs large-scale blood lead screening from different communities, such as the City of Toronto, Peel and Niagara Regions, and special joint projects from the Ministries of Health, Labour and Environment on blood lead testing. The instruments used for analysis are the Hitachi Zeeman Atomic Absorption Spectrophotometer (Model 180-80) and the Hemato-fluorometer ZnP (Model 4000) and an Auto-analyzer equipped with a UV Monitor for Hg analysis. This Section handled some 2900 specimens and 7500 tests in 1991.

The Newborn Screening test for Congenital Hypothyroidism Section handled some 155,100 samples in 1991. The purpose of the Newborn Screening Program is to ensure that (1) all infants born in Ontario are screened for Phenylketonuria (PKU) and Congenital Hypothyroidism (CH), and (2) infants suspected of having these diseases are diagnosed and treated promptly with adequate follow-up. Congenital Hypothyroidism is characterized by a deficiency of thyroid hormone which, if not treated, can cause mental retardation of varying degree. The incidence of CH in Ontario is 1 in 2,200 live-births, based on 1990 figures. The instruments used for TSH testing are: a time-resolved fluorometer plus printer and laboratory computer, automatic washer, shaker, puncher and dispensers for dispensing the diluted tracer solution and the enhancement solution. The PKU test is performed in the Clinical Bacteriology Section.

Mycology (Dr. R. Summerbell (416) 235-5720)
The Mycology Section isolates and identifies fungi (including yeasts) and aerobic actinomycetes causing systemic and dermatological diseases, as well as allergenic diseases (e.g. hypersensitivity pneumonitis) and airborne toxicosis. The Section does not analyze for food-borne fungal toxins (myco-toxins) but will identify suspected poisonous mushrooms from areas where the local Poison Control Centre does not provide the services of a local expert. Fungal antibiotic sensitivity testing is provided as well as limited epidemiological bio-typing analysis. The laboratory does not analyze for blood levels of antifungal drugs but will provide referrals.

The Section has a reference stock culture collection consisting of several thousand medically important and otherwise clinically significant fungi.

Parasitology (Dr. T. Scholten (416) 235-5722)
The Parasitology Section assists physicians and other health personnel with the accurate diagnosis of parasitic infections in humans (PRIMARY DIAGNOSIS). The laboratory also: provides accurate diagnosis of parasites in domestic animals which, potentially, are of medical significance; assists other laboratories (public health, hospital, and private) in confirming or correcting identifications made by those laboratories (SECONDARY DIAGNOSES

or REFERENCE); teaches and trains medical and paramedical personnel in the accurate identification of parasitic organisms through weekend workshops, full-time courses, seminars etc.; assists in the provincial proficiency testing program, administered by LPTP, and in helping individual laboratories with their own internal quality assurance programs; and, conducts research into new or improved laboratory technologies, and into epidemiological studies of parasitism in the Province.

The World Health Organization estimates that it takes two years or more of continuous, daily training under expert supervision, before a technologist can be considered experienced enough to accurately recognize *Entamoeba histolytica* (and related parasites).

Extensive and intense training of staff is absolutely essential, and is maintained.

In addition to thorough training and extensive experience in intestinal-, blood-, cavity-, and tissue-parasitology, the laboratory has expertise in general, veterinary, and medical arthropodology, and a special interest in such groups of parasites as ticks, fleas, and myiasis-causing flies; and in laboratory techniques such as staining, tissue sectioning, and concentration methods; as well as in statistical analysis.

Serology (Dr. R. Notenboom (416) 235-5714)
Using immunological analyses of the host, rather than microbiological methods, (microscopic examination and culture), the Serology Section provides diagnostic services for the identification and prevention of infectious diseases in the community. Immunological methods are of great value when dealing with large numbers of patients, and/or when pathogens cannot be identified directly. Immunological parameters are also measured in the assessment of efficacy of treatment. The continual integration of technical developments makes serologic procedures increasingly cost effective, specific and sensitive. The Section functions as a reference laboratory for the Province and in some instances for the Country (TPI test for syphilis and Yersinia serodiagnosis). Applied research deals with syphilis and Lyme disease.

Virology (Dr. M. Fearon (416) 235-5724)
The Central Virology Laboratory provides services for the diagnosis of Viral, Chlamydial and Rickettsial diseases and serves the whole province of Ontario. It is one of the first and one of the largest Virology Laboratories in North America and was established in 1942, following a large outbreak of Psittacosis which occurred in Toronto in 1941.

The Section collaborates with federal and international organizations (LCDC, FCA, CDC, and WHO); trains visiting technologists, medical residents and scientists.

Virology has a permanent staff of 80, working in 9 operational areas. These areas are: (1) Virus Isolation & Identification; (2) Viral Serology; (3) Hepatitis; and (4) Special Procedures (EBV, Rabies) {all in General Virology}; (5) Arboviruses, Rickettsia, Special Pathogens, & Electron Microscopy; (6) Reference Hepatitis & Viral Biochemistry; (7) Chlamydia; (8) Molecular Virology; and (9) HIV/AIDS Laboratory {all in Reference and Research Virology}.

Areas of special expertise include:

- Isolation and identification of most viruses, chlamydia, rickettsia; cell cultures; direct detection by IFA, ELISA, Electron Microscopy;
- Serology for these agents and Mycoplasma by Complement Fixation, neutralization, IFA, ELISA, HAI, PHA, RIA;
- Reference testing for the hepatitis viruses: HAV, HBV, HCV, HDV;
- Monoclonal antibodies production, hybridization and probes; PCR;
- Gastroenteric viruses, Arboviruses, hemorrhagic fever viruses, Class 4 agents (Lassa, Ebola, Marburg, Rift Valley, Congo, Crimea, Haatan, etc.);

- Q fever (*Coxiella burnetii*);
- HIV/AIDS: ELISA, Western blot, culture, direct detection, PCR;
- Biohazard containment and contingency programs - the Maximum Containment (Class 4) Laboratory will become operational in 1992;
- National Reference Laboratory for Rabies Serology.

FACILITIES AND EQUIPMENT

The Central Laboratory occupies an approximately 14,000 m^2 facility at the Resources Road complex.

The comprehensive range of equipment includes:

Auto-analyzers; High Performance Liquid Chromatographs; Gas Liquid Chromatographs; ELISA Systems; Laser Nephelometer; Radio Immunoassay Counters; Fluorometers; Electron, Fluorescence and Light Microscopes; Gamma Counter; Radiometric Growth Analyzer; Mass Spectrometer; Gene Probes; Thermocyclers (PCR); Gel Electrophoresis; Biological Safety Cabinets; Maximum Containment Laboratory.

DOCUMENTATION

The Laboratory Services Branch operational publications include the following and are used by all laboratories in the Branch:

1. A Guide to the Collection and Submission of Specimens.
2. Laboratory Safety Manual.
3. Chemical Safety Manual.
4. Environmental Bacteriology Laboratory Procedures Manual.
5. Health Inspector's Guide to the Principles and Practices of Environmental Bacteriology.
6. A Guide to the Laboratory Investigation of Enteric Disease Outbreaks.
7. Recommendations for the Control of Legionella in Hospitals.
8. In-house Clinical Laboratory Procedures Manuals in Bacteriology, Mycology, Parasitology, Mycobacteriology, Serology, and Virology.

AREAS OF SPECIAL EXPERTISE

National reference services are provided with respect to Yersinia identification, Treponema pallidum immobilization testing, and the serological investigation of rabies.

Testing for the HIV-1 virus, which is the cause of AIDS, is done by the Central Laboratory and the Ottawa, Kingston and London regional laboratories.

A Maximum Containment Laboratory (MCL) is located in the virology department. It is the only such laboratory in Canada and able to test for dangerous exotic diseases which could be brought into the country through travel and the import of animals from endemic areas. The MCL will become operational in 1992.

PRINCIPAL CLIENTS

- Hospitals
- Practising Physicians
- Medical Officers of Health
- Private Laboratories
- General Public
- Other Ministries

REGIONAL PUBLIC HEALTH LABORATORIES

LABORATORY SERVICES BRANCH
HEALTH SYSTEM MANAGEMENT GROUP
MINISTRY OF HEALTH
81 RESOURCES ROAD, ETOBICOKE, ONTARIO M9P 3T1

PHONE: (416) 235-5952 (Reception) FAX: (416) 235-6063

MANAGER, REGIONAL SERVICES: Ms. A. Prytula

ACTIVITY

The network of Regional Laboratories complements the activities of the Central Laboratory by providing local and regional laboratory support services to physicians, hospitals, public health units, private laboratories, and affiliated departments within the Ministry in the detection or diagnosis, treatment and prevention of communicable diseases.

HISTORY

To provide a better service to physicians throughout Ontario, regional laboratories were established in Kingston (1905), London (1911), Thunder Bay (1919), North Bay (1920), Sault Ste. Marie (1920), Peterborough (1921), and Ottawa (1922). For 22 years no further laboratories were set up, but starting near the end of World War Two, regional laboratories were established in Timmins (1944), Windsor (1946), Kirkland Lake (1947), Kenora (1950), Orillia (1955), Woodstock (1955), Palmerston (1966), St. Catharines (1968), Hamilton (1971), and Sudbury - a satellite of the Timmins laboratory - (1973). Financial constraints within the provincial government led to the closing of four of the laboratories in 1976 (Kenora, North Bay, St. Catharines, and Woodstock).

The Regional Laboratories throughout the province are involved in teaching/training of students from community colleges, universities and hospital training programs.

STAFF AND ORGANIZATION

The Regional Public Health Laboratories have a combined permanent staff of approximately 220. Overall coordination is provided by the Manager, Regional Services who is located at the Central Laboratory.

HAMILTON REGIONAL PUBLIC HEALTH LABORATORY
PO BOX 2100, HAMILTON, ONTARIO L8N 3R5
(250 FENNELL AVENUE WEST)

PHONE: (416) 385-5379 FAX: (416) 385-7931

DIRECTOR: Dr. Susan G. Jackson

ACTIVITY

The Hamilton Public Health Laboratory provides diagnostic and/or reference testing in Clinical Microbiology (Bacteriology, Chlamydia, Mycology, Parasitology), Environmental Bacteriology and Serology for the Halton, Haldimand-Norfolk, Hamilton-Wentworth, and Niagara regions. An active research program with emphasis at present on food-borne disease/gastroenteritis is ongoing. In Hamilton, the Laboratory participates in the Hamilton Health Sciences Laboratory Program with laboratories from the Hamilton teaching hospitals.

FACILITIES AND EQUIPMENT

The 900 m^2 laboratory, built in 1971, is situated on the grounds of the Hamilton Psychiatric Hospital, on the West Mountain. In addition to basic microbiological laboratory equipment (incubators, microscopes, refrigerators etc.) recently, basic equipment for protein purification and a research quality inverted microscope have been acquired.

AREAS OF SPECIAL EXPERTISE

- Food borne diseases - particularly bacterial toxins/virulence factors.
- Mycology - dermatophytes.
- Parasitology.
- Immunoassay - method development.

KINGSTON REGIONAL PUBLIC HEALTH LABORATORY
PO BOX 240, KINGSTON, ONTARIO K7L 4V8
(181 BARRIE STREET)

PHONE: (613) 548-6630 FAX: (613) 548-6636

DIRECTOR: Dr. T.P. Subrahmanyan

FACILITIES AND EQUIPMENT

The Kingston Regional Public Health Laboratory is the oldest regional laboratory of the Ontario Ministry of Health and has provided continuous service since 1905. The laboratory was completely renovated and modernised in 1990-91, after nearly 50 years at its present central location in the city of Kingston.

The new 1,000 m^2 facility has two suites of Level-3 containment rooms for work with viruses and myco-bacteria. There are also several rooms with Class 2 biohazard containment cabinets. It is well equipped for work with cell cultures, ELISA tests, gas liquid chromatography and special types of microscopy. The staff have access to an electron microscope at Queen's University. Renovation also included the installation of a modern air-handling system which will provide excellent protection to staff from infectious agents.

AREAS OF SPECIAL EXPERTISE

In addition to providing routine microbiology service to the southeastern region of Ontario (from Trenton to Cornwall), the Kingston Public Health Laboratory offers special services in Clinical Virology, Myco-bacteriology, Serology and Environmental Bacteriology and is the only laboratory in the region to offer some of these services. Testing for HIV-1 began in October 1991. The laboratory plays a major rôle in investigating various epidemics in the region and co-operates closely with the four health units in the region in their programs to prevent, monitor and control infectious diseases. The first pilot project for the Ministry of Health Laboratory Information System started in the Kingston laboratory in September 1991.

Senior staff in the laboratory are involved in teaching students at Queen's University and St. Lawrence College. A program for training high school students was also initiated in 1991.

LONDON REGIONAL PUBLIC HEALTH LABORATORY

PO BOX 5704, TERMINAL A, LONDON, ONTARIO N6A 4L6
(850 HIGHBURY AVENUE)

PHONE: (519) 455-9310 FAX: (519) 455-3363

DIRECTOR: Dr. Abdul Chagla

FACILITIES AND EQUIPMENT

The London Regional Public Health Laboratory occupies a 993 m^2 facility, and is located on the 5th floor of the London Psychiatric Hospital. It provides services in routine and specialty testing to physicians, hospitals, private laboratories and health units of London-Middlesex, Brant, Elgin-St. Thomas, Haldimand-Norfolk, Lambton, Oxford and Waterloo.

The Laboratory has a staff of 23 and performs approximately 200,000 tests per year. These include testing for agents of bacterial, viral (including HIV-1), chlamydial, and parasitic infections. It also provides microbial analysis of food, dairy products, environmental and infection control swabs. Service is also provided to private citizens and health officials for bacteriological testing of water.

The comprehensive range of equipment includes:

Autoclaves, incubators, ELISA washers and automated readers, refrigerators and deep freezers, light and fluorescence microscopes, laminar-flow safety cabinets, agarmatic, pH meters, water-baths, centrifuges, and stomachers.

AREAS OF SPECIAL EXPERTISE

- Reference Bacteriology
- Enteric Bacteriology
- Myco-bacteriology
- Parasitology
- Mycology
- Serology for HIV, Syphilis, and Rubella
- Chlamydia (Culture and EIA)
- Environmental Bacteriology

- Teaching
  - Medical Technology (Fanshawe College)
  - Medical Microbiology & Public Health (University of Western Ontario)

ORILLIA PUBLIC HEALTH LABORATORY
PO BOX 600, ORILLIA, ONTARIO L3V 6K5
(750 MEMORIAL AVENUE)

PHONE: (705) 325-7449 FAX: (705) 329-6001

DIRECTOR: Ms. Donna Hodge

FACILITIES AND EQUIPMENT

The Orillia Regional Laboratory has a staff of 16 working in a 900 m^2 facility on the grounds of the Huronia Regional Centre.

The laboratory includes basic equipment for performing microbiological analyses and a Bactec (model 730) for non-radiometric monitoring of blood culture specimens.

AREAS OF SPECIAL EXPERTISE

Diagnostic/Reference Testing:

- Complete diagnostic laboratory service in Clinical Bacteriology for a local community hospital
- Tuberculosis bacteriology
- Mycology
- Parasitology
- Detection of sexually transmitted diseases: GC, Chlamydia, syphilis (but not AIDS)
- Rubella and Hepatitis B serology
- Rotavirus antigen detection
- Environmental bacteriology; primarily water bacteriology for regional health units, municipalities, private citizens, MNR
- Isolation of Helicobacter pylori from gastric biopsies

Teaching:

- Medical Laboratory Technologist internship program for Canadore College.

OTTAWA PUBLIC HEALTH LABORATORY
PO BOX 6301, STATION J, OTTAWA, ONTARIO K2A 1S8
(2380 ST. LAURENT BLVD., OTTAWA K1G 5A4)

PHONE: (613) 736-6800 FAX: (613) 736-6820

DIRECTOR: Dr. S. Kasatiya

FACILITIES AND EQUIPMENT

The Laboratory has a permanent staff of 34 and occupies 1,700 m^2 of modern facilities in its new location, near all major hospitals serving Eastern Ontario from Mattawa to the north, Silver Lake to the west, Hawkesbury to the east, and Morrisburg to the south.

The laboratory continues its close collaboration and equipment sharing with the member organizations of the Health Sciences Centre of Ottawa University and with various federal and national institutions.

The laboratory possesses microscopes, gas liquid chromatograph, pH analyzers, ELISA reader etc. and contracts with Ottawa University for electron microscopy and other research related facilities.

The Ottawa Public Health Laboratory performs primary and second-line reference tests in the areas of clinical and environmental microbiology, serology and virology for the treatment of communicable diseases and control of outbreaks; operates the region's HIV laboratory; isolates organisms causing sexually transmitted diseases, gastro-enteric and respiratory viruses, detects syphilis, hepatitis, etc.

AREAS OF SPECIAL EXPERTISE

- HIV-1 testing.
- Phage typing; one of the schemes developed locally is being used routinely at the National Laboratory for Disease Control in Ottawa and at the International Phage typing Centre, Central Public Health Laboratory, London, England.
- International Collection Centre for Bacteriophages, operated conjointly with the Department of Medical Microbiology of Laval University, Quebec.
- Fatty acid analyses and classification of bacteria by gas liquid chromatography.
- *Mycoplasma pneumoniae*.
- Enteric Environmental Bacteriology.

PALMERSTON PUBLIC HEALTH LABORATORY
PO BOX 700, PALMERSTON, ONTARIO N0G 2P0
(HIGHWAY #23)

PHONE: (519) 343-3102 **FAX: (519) 343-2832**

DIRECTOR: Mr. H.C. (Carroll) Mallory

FACILITIES AND EQUIPMENT

The Palmerston Public Health Laboratory is located on the grounds of the Mid-western Regional Centre, halfway between Palmerston and Listowel. It serves the counties of Bruce, Dufferin, Grey, Huron, Perth, and Wellington. Included in its 465 m^2 facility is a negative pressure containment room which can be used for isolation of organisms requiring containment level-C. The laboratory has the necessary equipment to operate an efficient microbiology laboratory, including phase and fluorescent microscopes, automatic plate pouring equipment, and a BacTec for blood culture testing.Palmerston coordinates the transfer of over 2,000 specimens to Toronto per annum.

AREAS OF SPECIAL EXPERTISE

The laboratory performs tests in environmental bacteriology, medical bacteriology, parasitology, serology, chlamydiology and virology (e.g. antigen detection tests for rotavirus and RSV). The laboratory analyses waters, foods and enteric specimens to identify the cause of food- and water-borne enteric disease outbreaks.

Besides doing the routine first-line bacteriology for seven small hospitals, it also does almost all of the syphilis serology, parasitology and chlamydiology collected at the 25 hospitals in the area serviced.

PETERBOROUGH PUBLIC HEALTH LABORATORY

PO BOX 265, PETERBOROUGH, ONTARIO K9J 6Y8
(99 HOSPITAL DRIVE)

PHONE: (705) 743-6811 FAX: (705) 745-1257

DIRECTOR: Mr. J. Stephen Thompson

FACILITIES AND EQUIPMENT

The Peterborough Regional Laboratory is the sole occupant of both floors of an 860 m^2 building on Hospital Drive in Peterborough. This location allows easy access for many major clients in the Peterborough area. Most clients are served by courier services either Ministry-operated or commercial for pick-up of specimens and delivery of laboratory reports. The Peterborough Laboratory serves Peterborough, Victoria, Haliburton and Northumberland Counties and the Regional Municipality of Durham.

The equipment includes the necessities for a basic microbiology practice with some specialty equipment such as ELISA readers and fluorescence microscopes.

AREAS OF SPECIAL EXPERTISE

The Peterborough Laboratory performs a large number of water bacteriology tests annually, both for private citizens and official agencies such as local Health Units, Ministry of the Environment, Ministry of Natural Resources, Parks Canada, and local Conservation Authorities.

In addition to a high volume of routine clinical bacteriology specimens, specialty services are offered to clients such as public hospital laboratories, commercial laboratories, and private physicians in the following areas of microbiology:

- Tuberculosis bacteriology.
- The microbiology of sexually transmitted diseases.
- Enteric bacteriology.
- Intestinal parasitology.
- Mycology.

A virology service is being developed.

SAULT STE MARIE PUBLIC HEALTH LABORATORY
PO BOX 220, SAULT STE MARIE, ONTARIO P6A 5L6
(160 McDOUGALL STREET)

PHONE: (705) 254-7132 **FAX: (705) 945-6873**

DIRECTOR: Mr. John Jessop

FACILITIES AND EQUIPMENT

The laboratory occupies 700 m^2 on the third floor of the Ontario Government Building in downtown Sault Ste Marie, and services the District of Algoma from Hornepayne in the north, to the North Channel in the south, and from White River in the west to Spanish in the east, an area of 56,000 square kilometres, with a population of 135,000.

A variety of microbiology equipment is used, including:

> Autoclave-sterilizers; analytic balance; glass distilled water system; deionizer/demineralizer; 'wet' vacuum cleaner; stomacher/blender; automatic Petri-dish plate pourer; portable media weighing fume-hood (with HEPA filter); vacuum pumps; Class-II biological safety cabinet; anaerobic chamber; fluorescence microscope; plate microscopes; -20°C freezer, water-baths, gas liquid chromatograph, fume-hood, light microscopes, carbon dioxide incubator, refrigerators, incubators.

AREAS OF SPECIAL EXPERTISE

The Sault Laboratory has been in operation since 1920 and presently has a staff of 12. It is solely involved in routine environmental bacteriology; and clinical bacteriology (including Myco-bacteriology and the agar dilution method of antimicrobial susceptibility testing), parasitology, mycology, and syphilis serology. Specimens and/or cultures are referred to other public health laboratories for additional tests or further reference testing. The Laboratory acts as the microbiology laboratory for the General Hospital and Group Health Centre in Sault Ste. Marie, as well as for the Lady Dunn Hospital in Wawa and St. Joseph's General Hospital in Blind River. In addition, the laboratory offers microbiology services to the Medical Officer of Health and his staff at the Algoma District Health Unit, to physicians, and to other provincial ministries and also to the federal government.

SUDBURY PUBLIC HEALTH LABORATORY

1300 PARIS CRESCENT, SUDBURY, ONTARIO P3E 3A3

PHONE: (705) 523-6917 FAX: (705) 523-6918

DIRECTOR: Mr. F.E. Cahoon

FACILITIES AND EQUIPMENT

The Sudbury Public Health Laboratory is located on the ground floor of the Sudbury and District Health Unit. This satellite laboratory of Timmins was established in 1973 to provide Environmental Bacteriology services for the Health Unit as well as to meet the needs of the Sexually Transmitted Disease Clinic. This laboratory also acts as a reference centre for area laboratories in the confirmation of *N. gonorrhoeae*. Testing not performed on site is transferred to the Timmins Regional Laboratory or the Central Laboratory, Toronto. The catchment area served by the three technical staff of the Sudbury Public Health Laboratory extends west to Manitoulin Island, south to the French River, north to Chapleau, and west to North Bay.

Equipment includes:

Seven-day programmable incubator/refrigerator; UV Sterilizer; Carbon dioxide incubator; Ph meter; autoclave; two light microscopes.

AREAS OF SPECIAL EXPERTISE

Environmental Bacteriology of milk, water and restaurant sanitation. The culture and identification of *N. gonorrhoeae* and the serology of Syphilis.

THUNDER BAY PUBLIC HEALTH LABORATORY
PO BOX 1100, STATION F, THUNDER BAY, ONTARIO P7C 4X9
(336 SOUTH SYNDICATE AVENUE)

PHONE: (807) 622-6449 **FAX: (807) 473-3046**

DIRECTOR: Dr. Frederick R. Ball

FACILITIES AND EQUIPMENT

The Thunder Bay Public Health Laboratory occupies a 665 m^2 faciiity near the downtown core of the former city of Fort William.

The comprehensive range of modern equipment includes:

> ELISA (plate and bead) readers; fluorescence microscope; phase-contrast microscope; access to transmission electron microscope; ultra-low freezer; anaerobic glove box; HEPA-filtered biological containment cabinets; gas chromatograph.

AREAS OF SPECIAL EXPERTISE

Specialties offered include a full-range of tests in the following microbiology sub-disciplines: Clinical Bacteriology; Environmental Bacteriology; Mycology; Parasitology; Virology; Myco-bacteriology; and syphilis serology.

The laboratory acts as a referral facility in these specialties to hospital and private laboratories across all of northwestern Ontario - an area with a land mass which exceeds one-half of all of Ontario. As well, it acts as a first-line microbiology laboratory for a number of smaller northwestern Ontario hospitals. The Thunder Bay Public Health Laboratory plays a vital rôle in the performance of analytical testing in support of Public Health programs offered by the Thunder Bay Health Unit and the Northwestern Health Unit. Its services are also utilized by a number of other ministries such as MNR. Currently, 18 individuals are employed in the laboratory, 12 of whom are registered technologists.

TIMMINS PUBLIC HEALTH LABORATORY

67 WILSON AVENUE, TIMMINS, ONTARIO P4N 2S5

PHONE: (705) 267-6633 FAX: (705) 267-6571

DIRECTOR: Mr. F.E. Cahoon

FACILITIES AND EQUIPMENT

The Timmins Regional Public Health Laboratory, housed in an 836 m^2 building, provides first-line, specialty and reference Microbiology services to hospitals, clinics, private laboratories and physicians, three District Public Health Units servicing the Porcupine, Temiskaming and Sudbury districts, and other Ministries, including the Ministry of Natural Resources and the Ministry of the Environment. Although the focus of the laboratory is on Clinical Bacteriology and Virology, services are also provided in Parasitology, Serology, Mycology, and Environmental Bacteriology. Many small area hospitals within the catchment area do not have their own bacteriology laboratories and therefore rely on the Timmins Regional Laboratory for provision of primary bacteriology services. Currently eight hospitals comprising 497 active care beds are serviced by the 15 staff of the Regional Laboratory.

Equipment includes:

Four Safety Cabinets; 2 Exhaust Hoods; Carlton Cabinet; Fluorescence Microscope; Gas Chromatograph; ELISA readers, Fine Balances; pH Meters; Incubators; Freezers; Dry Ice Maker; Tissue Culture Rotator; Refrigerated Centrifuges; Autoclaves; Carbon Dioxide and tri-gas Incubators.

AREAS OF SPECIAL EXPERTISE

Virus culture and Serology including Hepatitis testing and Rubella testing.

Emphasis on in-patient clinical microbiology and sexually transmitted diseases.

WINDSOR PUBLIC HEALTH LABORATORY
PO BOX 1616, WINDSOR, ONTARIO N9A 6S2
(3400 HURON CHURCH ROAD)

PHONE: (519) 969-4341 FAX: (519) 973-1481

DIRECTOR: Mr. Nicholas R. Paul

FACILITIES AND EQUIPMENT

The Windsor Regional Public Health Laboratory provides primary diagnostic and reference services in microbiology, for clients in Kent and Essex Counties. Clients include physicians, area hospitals, private laboratories, as well as health units for the two counties.

A staff of 18 work in a modern 930 m^2 facility. Tests are performed in bacteriology, myco-bacteriology, mycology, environmental bacteriology, parasitology, serology, and virology. The laboratory has the accessory equipment to perform tests in routine microbiology as well as automated ELISA instruments.

The laboratory also has access to the electron microscope at the University of Windsor.

AREAS OF SPECIAL EXPERTISE

Windsor is one of the few regional laboratories offering comprehensive testing in virology, including diagnosis through direct virus detection by electron-microscopy. Although a wide variety of tests is available, the emphasis is on diagnosis of communicable diseases.

DRUG TESTING LABORATORY

DRUG PROGRAMS BRANCH
HEALTH SYSTEM MANAGEMENT GROUP
MINISTRY OF HEALTH
81 RESOURCES ROAD, ETOBICOKE, ONTARIO M9P 3T1

PHONE: (416) 235-5929 FAX: (416) 235-5951

CHIEF: Dr. S. Ian Borst

ACTIVITY

The Drug Testing Laboratory provides the analytical evaluation of pharmaceutical products as required by the various testing programs of the Drug Programs Branch. The laboratory tests products from pharmaceutical manufacturers for listing int the Drug Benefit Formulary/Index ("The Formulary"). Comparative drug surveys are conducted for The Formulary to monitor product interchangeability. Drugs purchased by the Ontario Government for institutions are tested by the laboratory prior to distribution. In addition, queries from various sources regarding drug quality are referred to the Drug Testing Laboratory.

HISTORY

The Drug Testing Laboratory was established in the Ministry of Health in 1968 by transfer of the Pharmaceutical Chemistry Section from the Ministry of the Attorney General. The laboratory was the testing facility for Drugs and Biologicals which evolved into the Drug Programs Branch.

STAFF AND ORGANIZATION

The laboratory has a permanent staff of 12 specializing in pharmaceutical analysis.

FACILITIES AND EQUIPMENT

The laboratory occupies a 400 m^2 facility in the Laboratory Services Complex at 81 Resources Road.

The range of equipment includes:
High Performance Liquid Chromatography Systems, Gas Liquid Chromatography, UV-Visible Spectrophotometers, Infrared Spectrophotometer, Atomic Absorption Spectrophotometer, Fluorometer, Polarimeter, Automatic Potentiometric Titration Systems, Automatic Dissolution Systems, Constant Temperature Humidity Oven, Semi-Micro/Micro Balances, and Automatic Melting Point Apparatus.

DOCUMENTATION

None available for distribution.

AREAS OF SPECIAL EXPERTISE

Evaluation of pharmaceutical product and raw material standards. Expertise in pharmaceutical analyses techniques, including HPLC, GLC, TLC, UV-VIS Spectrophotometry, IR, and Potentiometric Titrations. Physical pharmaceutical testing of products, including dissolution.

MINISTRY OF LABOUR

The Ministry operates four laboratories. The Occupational Health Laboratory and The Radiation Protection Laboratory are located in Toronto in the Resources Road complex. The Wire Rope Testing Laboratory is situated in the Whitney Block of the Parliament Buildings, Queen's Park, Toronto. (The Ministry is in the process of relocating its existing wire rope testing facility to Sudbury. The new Materials Testing Laboratory will be located on the campus of Laurentian University in the Mines and Minerals Research Centre; it is scheduled to go into production in 1992.) The Medical Service Chest Clinics are located in downtown Toronto with a Regional Northern Clinics in Sudbury and Timmins, and mobile units.

OCCUPATIONAL HEALTH LABORATORY SERVICE

OCCUPATIONAL HEALTH AND SAFETY BRANCH
MINISTRY OF LABOUR
101 RESOURCES ROAD, WESTON, ONTARIO M9P 3T1

PHONE: (416) 235-5958 FAX: (416) 235-6024

CHIEF SCIENTIST: Dr. Mark A. Nazar

ACTIVITY

The laboratory analyzes specimens gathered from workers in medical surveillance programs that are designed to ensure that workers are not overexposed to hazardous substances. In addition, a large proportion of analyses are from air in the workplace to determine what workers are exposed to and to ensure compliance with existing standards.

HISTORY

For 70 years the Occupational Health Laboratory has maintained high standards and scientific proficiency in the field of industrial hygiene. The first laboratory was established in the Whitney Block at Queen's Park by the Division of Industrial Hygiene under the Ontario Board of Health. Industrial health hazards were only dimly perceived in the 1920's and the laboratory contributed to increased awareness and developed methods of evaluation.

By the time the laboratory moved to its current quarters in 1981, it was recognized as the largest and most extensively equipped facility of its kind in Canada.

STAFF AND ORGANIZATION

The Occupational Health Laboratory has a permanent staff of 44 working in six operating units: Occupational Exposure Assessment; Atomic Absorption Spectroscopy; Infrared & Emiss. n Spectroscopy; Chromatography; X-Ray Diffraction & Electron Microscopy; and Administration.

FACILITIES AND EQUIPMENT

The laboratory occupies a modern 3,000 m^2 facility designed for the specialized nature of its work. Safety precautions and safe working procedures are in force everywhere in the laboratory and have constantly been improved since 1981 when the building was commissioned. A security system monitors all entrances and the external storage bay.

The analytical equipment is listed according to function:

1. X-Ray Microscopy
   Electron microscope with scanning and transmission modes and energy-dispersive X-Ray analysis; X-Ray Diffractometers; X-Ray Fluorescence Spectrometer; Optical, phase contrast microscopes.
2. Infra-red and Emission Spectroscopy
   Fourier Transform Infra-red Spectrometer; Standard Dispersive Infra-red Spectrometer; Gas Chromatographs; Ion Chromatograph; UV-Visible Spectrometers; Fluorescence Meter; Inductively-Coupled-Plasma Atomic Emission Spectrometer; Ion-Trap Detector
3. Chromatography
   Gas Chromatograph-Mass Spectrometer with Chemi-ionization ability; High Performance Liquid Chromatographs; Gas Chromatographs with multiple detectors and autosamplers.
4. Clinical Samples
   Atomic Absorption Spectrometers; Mercury Analyzers; Biochemical Analyzer; Anodic Stripping Voltameter
5. Special Equipment
   Dust and Vapour Chamber.

DOCUMENTATION

The Laboratory's operational publications include:

1. Laboratory brochure
2. Guide for Clinical Analysis
3. Health and Safety Manual
4. Analytical Methods
5. Tabulated Methods for Air Sampling and Analysis of Organic Compounds

AREAS OF SPECIAL EXPERTISE

Specialized analysis for a broad range of hazardous substances affecting workers throughout the province are performed as required. The laboratory provides full-scale analytical support for the medical and occupational hygiene services of the Operations Division and specialized services to other agencies. Its comprehensive range of instruments and equipment provides capabilities to analyze for a variety of inorganic substances, organic compounds and particulate matter varying in size from bulk to trace quantities. The laboratory's scientific staff are available on a consultative basis to assist industrial firms with the analytical aspects of their occupational health programs.

PRINCIPAL CLIENTS

- Ministry of Labour
- Physicians
- Other Ministries

RADIATION PROTECTION SERVICE
OCCUPATIONAL HEALTH AND SAFETY BRANCH
MINISTRY OF LABOUR
81A RESOURCES ROAD, WESTON, ONTARIO M9P 3T1

PHONE: (416) 235-5925 FAX: (416) 235-5926

CHIEF: Mr. John Tai-Pow

ACTIVITY

The Radiation Protection Service is the province's primary source of expertise on all matters concerning exposure to radiation. It evaluates and inspects control measures in workplaces and provides assistance to other ministries and agencies on exposure of the public to radiation in the environment. The service also provides radioanalytical and technical support to other provincial agencies involved in radiation surveillance programs and health studies related to the exposure of the public to radioactive isotopes.

HISTORY

The current Radiation Protection Service (RPS) was established in 1988 by combining the Radiation Protection Laboratory with the existing RPS units: Ionizing Radiation; Non-Ionizing Radiation, and Environmental Radioactivity. The former RPS began activities in the early 1940s while the Radiation Protection Laboratory was established in 1960 (at 360 Christie St., Toronto). In 1979, a new laboratory was completed at the present Resources Road site.

As a result of a major reorganization in 1976, the present radiation protection programs were transferred from the Ministry of Health to the Occupational Health Division of the Ministry of Labour.

STAFF AND ORGANIZATION

The Radiation Protection Service has a permanent staff of 40 working in four units: Ionizing Radiation; Non-ionizing Radiation; Environmental Radioactivity; and Radiation Protection.

FACILITIES AND EQUIPMENT

The Service occupies a 1,300 m^2 of facility shared with the Ministry of Health.

The analytical equipment is listed according to function:

1. Radiochemistry

   Radioisotope measuring equipment (alpha and beta gas flow-proportional counters, radon scintillation counters, gamma spectrometers, alpha spectrometers, liquid scintillation spectrometers, fluorometers, thermoluminescent dosimeter readers); spectrophotometers; pH meters; centrifuges; analytical balances;
2. Ionizing Radiation

   Portable Survey Equipment (Pulsed X-Ray Beam Monitors, Ionization Chambers, Peak Kilovoltage Meters); Calibration Equipment (Co/Cs Irradiator & Optical Bench, Low-level Co, Cs & Ra Reference Sources, Medical/Veterinary X-Ray Calibration unit, Industrial X-Ray Calibration Unit, Secondary Standard Ionization Chamber, and Anatomical Phantoms);

3. Environmental Radioactivity
   Radon Daughter Counters; Geiger Counters; Alpha/beta Contamination monitors; Ionization Chambers; Scintillation Detectors; Tritium Monitors; Gamma Spectrometers; Thermo-luminescent Dosimeters; and Personal Dosimeters;
4. Non-ionizing Radiation
   Portable Survey Meters for ultra-violet, visible, microwaves, radio-frequency, very low frequency, extremely low frequency, and laser radiation; optics and radio-frequency/microwave laboratory equipment such as, spectrum radiometer, demonstration laser, spectrum analyzer, signal generators, and antennae.

DOCUMENTATION

The Service's operational publications include:

1. Radioanalytical Methodology Manual
2. Safety Manual
3. Radiation Contingency Response Manuals
   (Procedures for alerting staff; carrying out field sampling and communication activities; performing radiation surveys; monitoring water and foodstuffs).

AREAS OF SPECIAL EXPERTISE

The Service's special expertise includes:

- The determination of a wide range of naturally occurring and man-made isotopes at levels found in the environment and in the workplace
- The determination and assessment of exposure to X-rays
- The determination and assessment of exposure to non-ionizing radiation (e.g. microwaves, laser, radio-frequency, and UV radiation)
- Environmental radiation surveys and assessment
- Radiation dosimetry
- Response to radiation contingencies
- Radiation protection regulations and guidelines

PRINCIPAL CLIENTS

- Government of Ontario ministries

WIRE ROPE TESTING LABORATORY

OCCUPATIONAL HEALTH AND SAFETY BRANCH, MINISTRY OF LABOUR
c/o 260 CEDAR STREET, SUDBURY, ONTARIO P3B 3X2

PHONE: (705) 675-4468 FAX: (705) 673-1720

MANAGER: Marcel M. Djivre, P. Eng.

ACTIVITY

The Ministry has one approved laboratory for destructive testing of shaft ropes, as required under the Occupational Health and Safety Act and Regulations for Mines and Mining Plants.

The Wire Rope Testing Laboratory's principal function is to provide wire rope testing services for the mining operators of Ontario, Canada, and other countries. The Laboratory also provides services for other industries and projects, such as construction, industrial, bridges, ski-tows, and so forth. Approximately 800 rope samples are tested per year, generating an income of some $290,000 (1991).

HISTORY

The testing of mine hoisting ropes was first carried out by the Ontario Department of Mines in 1922. At that time, two men were employed part-time in conducting possibly one hundred tests per year. A Tinius-Olsen tensile testing machine with a capacity of three hundred thousand pounds was used.

In 1932, a tensile testing machine with a capacity of one million pounds was bought from W & T Avery Ltd., it is still in use. After the Avery machine was installed, special informative testing of used mine hoisting ropes was commenced, but it was not until 1940 that this work was done on a large scale.

The hoisting accident at the Paymaster mine in 1945, resulting in the death of sixteen miners, when a badly corroded hoisting rope failed, initiated the statutory destructive testing of mine shaft ropes.

STAFF AND ORGANIZATION

Currently, the Wire Rope Testing Laboratory in Toronto has two permanent staff, including the Superintendent, and three contract staff reporting to the Senior Structural and Materials Engineer (or the Manager) in Sudbury.

FACILITIES AND EQUIPMENT

In Toronto, the W & T Avery Ltd. tensile testing machine, with a capacity of one million pounds, is used for the destructive testing of wire ropes. The rope testing program includes:

- Evaluation of the breaking strength of the rope
- Extension of the rope
- Diameter of the rope at 0% and 15% loadings
- Diameter of the outer and inner wires
- Torsion of the outer and inner wires
- Measurement of length of lay
- Corrosion ratings for the rope and wire strands
- Lubrication ratings for the core and wire strands
- Visual examination of rope for wear, broken wires, nicking, abrasion or other defects.

Upon relocation to Sudbury, improvements to the program will include:

- Acquisition of a 1.2 million pounds capacity 'Dartec' Universal testing machine
- Hardness testing of the wires
- Determination of tensile strength and grade of the wires
- Microscopic examination of the wires
- Test chart interpretation e.g. determination of the Modulus of Elasticity and Energy Absorption.

DOCUMENTATION

The following publications are available:

- Ontario Destructive Wire Rope Testing Program
- Evaluation of Rope Factors of Safety.
- Failure of Shaft Ropes in Ontario Mines.

The laboratory produces the following documents: Wire Rope Test Certificates and Charts; Yearly Statistics; Engineer's Reports.

AREAS OF SPECIAL EXPERTISE

The laboratory has extensive experience in the destructive testing, inspection, and research of mine shaft ropes, for example:

- The determination of the breaking strength and extension of wire ropes
- Lubrication and corrosion ratings
- Torsion testing of wires
- Diameter and lay-length measurements
- Laboratory design
- Testing equipment evaluation
- Failure analysis of wire ropes
- International programs, advisory panels, courses and lectures
- Wire rope research programs.

CHEST CLINIC

OCCUPATIONAL HEALTH AND SAFETY BRANCH
MINISTRY OF LABOUR
880 BAY STREET (2nd Floor), TORONTO, ONTARIO M7A 2C7

PHONE: (416) 326-6340 FAX: (416) 326-6356

NORTHERN CHEST CLINICS

754 FALCONBRIDGE ROAD, SUDBURY, ONTARIO P3A 4S4
PHONE: (705) 560-9984 FAX: (705) 560 9590

54 WILSON AVENUE, TIMMINS, ONTARIO P4N 2S6
PHONE: (705) 264-8571

The Ministry operates a reading and storage facility for the evaluation of occupationally induced pulmonary disease. The Toronto office supervises the medical activities of the Sudbury and Timmins clinics. The Toronto office also incorporates a laboratory for the evaluation of Hand-Arm Vibration Syndrome. Mobile chest X-ray and pulmonary function testing units are available for special projects.

ACTIVITY

The Chest Clinic's principal function is to provide early detection of the dust-related lung diseases in surface or underground workplaces in Ontario. Workers in exposure are followed under legislation every second year. Testing includes the reading of chest X-rays and pulmonary function tests.

HISTORY

The surveillance of workers in silica, and later in other fibrogenic dust exposures, began under the Silicosis Act of 1950. In 1976, the Chest Clinic, then known as the Industrial Chest Disease Service, was transferred from the Ministry of Health to the Ministry of Labour and in 1977 the Northern Clinics, hitherto operated by the WCB, were incorporated into the Chest Clinic as well. In 1991, the Toronto and Northern Clinics were administratively separated and in 1992 both were converted to reading and storage facilities.

STAFF AND ORGANIZATION

The Toronto Chest Clinic has a permanent staff of 7. In northern Ontario, five clerical and technical personnel are retained. The Chest Clinic employs two physicians as well as administrative, technical and clerical staff. Reports are provided to the physician of the worker's choice. Housed in the same location is the laboratory for the evaluation of Hand-Arm Vibration Syndrome.

FACILITIES AND EQUIPMENT

The Chest Clinic in Toronto occupies a 968 m^2 facility in downtown Toronto. There is off-site archival storage for chest X-ray films and pulmonary function documents on workers who are no longer employed but who have at one time been followed.

The Sudbury office occupies a 362.5 m^2 facility, the Timmins clinic 149 m^2. All X-rays are stored at the Sudbury site. The Timmins clinic is staffed by a technician and a clerk. It houses X-ray facilities and pulmonary function testing instrumentation.

An appropriate level of instrumentation is used for the surveillance and diagnostic services provided.

Surveillance Program. The stationary units house installed chest X-ray equipment capable of taking 14" x 17" film, and dry bellows spirometers for forced expiratory spirometry on pre-employment examinations. The available mobile units house chest X-ray units and portable spirometers.

The Vibration Laboratory includes apparatus for estimating the severity of Hand-Arm Vibration Syndrome, including a Doppler unit for assessing vascular competency, sensory sensitivity recorders, a finger plethysmograph, cold water immersion testing apparatus capable of recording individual finger temperatures during immersion and recovery, and apparatus for lowering or raising core body temperature for peripheral vascular evaluation purposes.

DOCUMENTATION

The Chest Clinic provides annual reports on its activities in the Ontario Ministry of Labour annual reports.

AREAS OF SPECIAL EXPERTISE

The medical staff of the Chest Clinics are members of the Canadian Pneumoconiosis Reading Panel, a facility operated by the Chest Clinic in association with the Occupational Health Program of McMaster University. It is intended to provide documentation of current reading levels of physicians who interpret chest radiographs of the pneumoconioses under the International Labour Office Pneumonoconiosis Reading Program. Reading levels of Chest Clinic physicians are, therefore, measured at regular intervals. The Clinic requires surveillance and spiranetic tests to adhere to criteria established by the American Thoracic Society.

Members of the staff operate the Vibrational Laboratory which provides consultation to the WCB of Ontario as well as to outside physicians on Hand-Arm Vibration Syndrome.

MINISTRY OF THE SOLICITOR GENERAL

The Ministry has its major laboratory, the Centre of Forensic Sciences, located in Toronto. As of January 1992, it also has the Northern Regional Forensic Sciences Laboratory in Sault Ste Marie.

PUBLIC SAFETY DIVISION
MINISTRY OF THE SOLICITOR GENERAL

CENTRE OF FORENSIC SCIENCES

25 GROSVENOR STREET, TORONTO, ONTARIO M7A 2G8

PHONE: (416) 965-2561 FAX: (416) 324-3434

DIRECTOR: Mr. D.M. Lucas

NORTHERN REGIONAL FORENSIC SCIENCE LABORATORY

70 FOSTER DRIVE, SAULT STE. MARIE, ONTARIO P6A 6V3

PHONE: (705) 945-6550 FAX: (705) 945-6569

MANAGER: Dr. John Wells

ACTIVITY

The Forensic Science Laboratories conduct scientific investigations of cases involving injuries or deaths in unusual circumstances and in crimes against persons or property.

They provide scientific examination, analysis, evaluation and interpretation of physical objects and materials for law enforcement officers, crown attorneys, lawyers, coroners, pathologists, and other official investigative agencies. All cases are examined by qualified examiners who are able to testify to their findings at all levels of courts and official enquiries.

HISTORY

The present forensic science services were started in 1951 as the Attorney General's Laboratory. Fifteen years later the name was changed to the Centre of Forensic Sciences, and in 1972 the Centre was transferred to the Ministry of the Solicitor General. Although there had been a "Medico-Legal Laboratory" in the Department of the Attorney General as early as 1932, the services it provided were very limited. The Northern Regional Laboratory was established in 1992.

STAFF AND ORGANIZATION

Starting with three people in 1951, the Laboratories now have a permanent staff of 138 working in six operational sections: Biology; Chemistry; Firearms & Toolmarks; Questioned Documents; Photo-analysis; and, Toxicology.

FACILITIES AND EQUIPMENT

The Centre occupies a 6,500 m^2 facility in the George Drew building at Queen's Park. The Chief Coroner's Office and the Forensic Pathology Branch are housed in an adjacent building. The Northern Regional Laboratory occupies 1,600 m^2 in Roberta Bondar Place in Sault Ste. Marie.

The analytical equipment is listed according to function:

1. Biology

   The Trace Evidence Unit which specialises in the identification and comparison of human and animal hairs, man-made and natural textile fibres, and botanical specimens such as plants, plant products, and wood, utilizes the following equipment: comparison and polarized light microscopes, micro-spectrophotometer, and pyrolysis gas chromatograph.

   The Serology Unit which is involved in the examination of body fluids and genetic marker identification utilizes horizontal gel electrophoresis and an ELISA system.

   The DNA Analysis Unit uses principles of molecular biology and genetics for comparisons of DNA material and utilizes radio-labelled DNA probes, X-Ray film and duplicator, UV transilluminator, gel electrophoresis, and beta emission liquid scintillation counter.

2. Chemistry

   This section is involved in the examination of many types of organic and inorganic materials including petroleum products, explosives, soils, paint, gunshot residue, and glass. In addition, the Engineering Unit provides mechanical engineering analyses, traffic accident reconstruction, and metallurgical examination. The section also includes a laboratory for physics and electronics.

   The equipment used to conduct these examinations includes: pyrolysis, thermal desorption and high temperature gas chromatographs, X-Ray diffraction, liquid chromatograph, microscopes, FTIR, atomic absorption spectrophotometer, scanning electron microscope, photo-microscope, GRIM (glass refractive indices), sound spectrograph, digital signal processing station, oscilloscope, and audio-visual equipment.

3. Firearms & Toolmarks

   This section examines firearms, fired bullets, cartridge cases, ammunition, victim's garments and tissue samples from shooting occurrences such as hunting offenses, murders and attempts. Marks left by tools of various kinds, such as cutting and prying tools, are also examined.

   The equipment used consists of comparison- and stereo-microscopes, chronograph, and water and cotton bullet recovery systems. The section has an extensive database on ammunition and extensive expertise in many types of firearms.

4. Questioned Documents

This section is involved in the examination of handwriting, handprinting, and signatures to determine authorship. The staff also conduct physical and chemical examinations of printing processes, inks, pens, pencils, and paper.

The equipment used consists of stereoscopic microscopes, electrostatic documents analyzer (EDSA), video spectral comparator, and typewriter test grids.

5. Photoanalysis

Applied photographic methods based on ultraviolet, visual, laser, infrared (light), and hard and soft X-Ray techniques.

6. Toxicology

This section is involved primarily with analyses for medico-legal purposes in connection with drug, alcohol, and poison ingestion. The biological specimens examined usually consist of blood and urine, though other tissues can also be examined. This section is also responsible to a large extent for supervising the Breathalyzer program in this province.

A variety of instruments and techniques is used for drug analysis and include the following:
Gas chromatography - FID, NPD, ECD, TCD detectors; packed and capillary columns; direct, on column, and headspace.
Liquid chromatography - fixed wavelength, diode array, electrochemical, and fluorescence detection.
Gas chromatography/Mass spectrometry - quadrupole systems (bench top and research grade).
Immunoassay - RIA gamma liquid scintillation counter and fluorescence polarization supported by Multicalc data management software.
UV spectrophotometry.
Thin layer chromatography.
Atomic absorption spectrophotometry for lithium analysis.

DOCUMENTATION

The Centre's principal operational publication is:

Laboratory Aids for the Investigator

AREAS OF SPECIAL EXPERTISE

DNA Profiling
Breathalyzer and breath testing for alcohol.

PRINCIPAL CLIENTS

- Police, Coroners
- Fire Investigators (OFM)
- Crown Attorneys, Other Lawyers

MINISTRY OF TRANSPORTATION

The Ministry operates a Central Laboratory in Downsview (Toronto); four Regional Laboratories in London, Kingston, North Bay, and Thunder Bay; and mobile/field laboratories on construction sites throughout the province.

CENTRAL LABORATORY
ENGINEERING MATERIALS OFFICE
HIGHWAY ENGINEERING DIVISION
MINISTRY OF TRANSPORTATION
1201 WILSON AVENUE, DOWNSVIEW, ONTARIO M3M 1J8

PHONE: (416) 235-3733 FAX: (416) 235-5240

MANAGER: Mr. R.P. Northwood

ACTIVITY

The Engineering Materials Office (EMO), through its Central Laboratory ensures that materials used in provincial transportation systems are durable and cost effective. To this end the EMO is responsible for ministry policy related to materials used in the construction of provincial highways, and the design of structural foundations and related earth/rock work. The laboratory evaluates new products and processes in this field, and tests materials used in highway construction and maintenance to ensure they meet quality standards.

HISTORY

Bituminous Laboratory operations started in conjunction with the University of Toronto in 1924. A soils group started in 1946 and laboratory operations were consolidated in the Downsview area in 1950. The present Central Laboratory building was opened in 1956. A new laboratory complex is planned for the 1990's but a site has yet to be selected.

STAFF AND ORGANIZATION

The Central Laboratory has a permanent staff of 125 technicians, engineers, scientists, and administrative personnel working in five Sections: Bituminous; Chemicals; Concrete; Foundation Design; and Soils & Aggregates.

FACILITIES AND EQUIPMENT

The Central Laboratory occupies a 3,000 m^2 facility backing onto Highway 401 in Downsview.

A comprehensive range of testing equipment is used. This is listed according to function:

1. Physical
   Triaxial apparatus; Consolidation apparatus; Polished Stone Value apparatus; Aggregate Value apparatus; tanks for Magnesium Sulphate testing; Microscopes; X-Ray Diffractometer; Ovens; Sieve Shakers; Freezers; Crushers; Concrete Saws; Grinders; Polishers; Tensile and Compression Testers; Weatherometer; Viscosimeter; Materials Testing System; Gyratory Testing Machine; Wheel tracker Machine; Autoclaves; Moisture Rooms; Ozone Chamber

2. Inorganic
   Atomic Absorption Spectrophotometer; Electroanalyzer; Colorimeter

3. Organic
   Infra-red Spectrophotometer, Gas Chromatograph.

DOCUMENTATION

The EMO has two extensive series of publications, the Engineering Materials Report Series, and the Engineering Materials Information Series, these include operational publications such as:

MI-47 A Guide to the Description of Rock for Engineering Purposes by E.R. Magni
EM-73 Alkali-Aggregate Reactions in Canada: A Bibliography by C.A. Rogers
EM-78 Evaluation of the Rutting Potential of Asphalt Mixes using the Gyratory Testing Machine by K.K. Tam and D.F. Lynch
EM-86 Fly Ash in Concrete - Laboratory and Field Trials in Ontario by B. Chojnacki and R.P. Northwood

AREAS OF SPECIAL EXPERTISE

The testing of materials used in the construction and maintenance of highway bridges and pavements.

PRINCIPAL CLIENTS

- Ministry of Transportation
- Municipalities

REGIONAL LABORATORIES
GEOTECHNICAL SECTION - MINISTRY OF TRANSPORTATION

NORTHWESTERN REGIONAL LABORATORY
615 JAMES ST. SOUTH, PO BOX 1177, THUNDER BAY, ONTARIO P7C 4X9

PHONE: (807) 473-2098 FAX: (807) 473-2157
SUPERVISOR: Roger Yurick

NORTHERN REGIONAL LABORATORY
447 McKEOWN AVENUE, PO BOX 3030, NORTH BAY, ONTARIO P1B 8L2

PHONE: (705) 497-5480 FAX: (705) 476-5372
SUPERVISOR: Robert Webster

SOUTHWESTERN REGIONAL LABORATORY
659 EXETER ROAD, PO BOX 5338, LONDON, ONTARIO N6A 5H2

PHONE: (519) 649-3054 FAX: (519) 686-6172
SUPERVISOR: Roy Murphy

EASTERN REGIONAL LABORATORY
355 COUNTER STREET, PO BAG 4000, KINGSTON, ONTARIO K7L 5A3

PHONE: (613) 545-4762 FAX: (613) 545-4786
SUPERVISOR: Ken Lee

ACTIVITY
The regional laboratories provide materials testing services for the design of highways and bridges and test construction products to ensure they meet ministry quality standards.

HISTORY
The laboratories were established as follows: London (1948); Fort William (1957); Kingston (1960); and North Bay (1961).

STAFF AND ORGANIZATION
The laboratories are each staffed by a supervisor and a team of about 6 physical technicians.

FACILITIES AND EQUIPMENT
The Regional Laboratories have a total area of 3,000 m^2; the mobile bituminous laboratories total 134 m^2 and the field laboratories 979 m^2.

The testing equipment includes: sieves; scales; asphalt extractors; Marshall mix design equipment.

AREAS OF SPECIAL EXPERTISE
Concrete, Bituminous, Soils and Aggregate testing. Concrete and Bituminous mix design.

MINISTRY OF NATURAL RESOURCES

The Ministry has research laboratories active in four areas.

Wildlife Research, located in Maple, operates as a Section of Wildlife Policy Branch; Rabies Research is conducted at the Compound for live animals in Midhurst.

Fisheries Research operates as a Section within the Fisheries Policy Branch and is coordinated from Maple with the Harkness Laboratory located in Algonquin Park and regional researchers located in Thunder Bay, Glenora, South Baymouth, Wheatley, Sudbury, and Guelph.

The Ontario Forest Research Institute, located in Sault Ste Marie, operates within the Forest Products and Marketing Branch.

The Petroleum Resources Laboratory, in the Ministries' Southwestern Region, is located in London, Ontario.

WILDLIFE RESEARCH SECTION
WILDLIFE POLICY BRANCH
MINISTRY OF NATURAL RESOURCES
PO BOX 5000, MAPLE, ONTARIO L6A 1S9

PHONE: (416) 832-7133 FAX: (416) 832-7149 (Maple)
PHONE: (807) 343-4010 FAX: (705) 343-4001 (Thunder Bay)

MANAGER: Mr. Mark D. Garscadden

ACTIVITY

The Wildlife Research Section has the mandate to increase our understanding of the species and biological processes identified as important by MNR wildlife management staff, and MNR clients. The Section is recognized internationally for expertise in several areas, including biology of wolves and bears, wildlife health, rabies control research, small bird population monitoring, and deer and moose biology. At Maple, laboratory work consists of necropsy and processing of animals to determine cause of death, age, or other criteria of health. At Midhurst, animals are held to develop techniques for ageing and for vaccination of wildlife, specifically against rabies.

HISTORY

The Section started as part of the Department of Lands and Forests Research Branch, founded in 1945. When the Ministry of Natural Resources was formed in 1972, the Wildlife and Fisheries sections of the former Research Branch became sections of the Fisheries and Wildlife Research Branch, which was part of the Division of Fish and Wildlife. In a 1978 reorganization, the Wildlife Section became the Research Section of the Wildlife Branch, in the Outdoor Recreation Group. In 1990, the Wildlife Branch became the Wildlife Policy Branch, part of the Policy Division, with Wildlife Research retaining section status.

STAFF AND ORGANIZATION

Most Wildlife Section staff are based at the Southern Research Station in Maple, but conduct field work all over the province, as required. The Northern Unit, formed in 1989, is located in Thunder Bay at the Northern Forest Ecosystem Institute on the campus of Lakehead University.

The main section has four research scientists, a specialist in data analysis, three technicians and a secretary. The Rabies Unit consists of two research scientists, two biologists, and five technicians. The Northern Unit currently has three research scientists.

FACILITIES AND EQUIPMENT

The two major facilities are located on the Southern Research Station at Maple, and in the Northern Ecosystem Research Institute in Thunder Bay. There are general purpose laboratories in both places. The Section does not have any major equipment but does have fume-hoods, microscopes, microtome, geological saws, histology equipment, a necropsy room and microcomputers. There are plans to develop a major automatic radio-tracking system.

The Section also has various permanent or temporary field facilities. The Rabies Unit maintains a research compound for live animals near Midhurst, equipped with animal cages and equipment for cleaning and maintaining animals.

The Section has a Wildlife Research Station at Lake Sasajewun in Algonquin Park, presently used by a consortium of university researchers (MNR has no laboratory activity there now). The Predator Unit has a field camp near Chapleau, and the Northern Unit is currently choosing an area for study. Each study will last 10-15 years.

DOCUMENTATION

The major output of the Section is papers published in scientific journals, at a rate of 3-12 per year. A complete list is available upon request. The Section has produced annual reports.

AREAS OF SPECIAL EXPERTISE

- Handling live wild and captive animals
- Diagnosing causes of sickness and death
- Ageing wildlife.

The Section is known world-wide for its pioneering work in the oral vaccination of foxes against rabies. The work on wolves, black bears, polar bears, deer, moose, and wildlife health is also widely respected. Work on population dynamics, especially of small birds, is very advanced. Several members of the Section did pioneering work in wildlife telemetry, and there will be a major emphasis on that in the Northern Unit in the next few years. The Section has also done excellent work on grouse and geese and various fur-bearers. Section members have undertaken many projects in cooperation with other agencies, and with individual researchers in universities and overseas.

FISHERIES RESEARCH SECTION
FISHERIES BRANCH
MINISTRY OF NATURAL RESOURCES
PO BOX 5000, MAPLE, ONTARIO L6A 1S9

PHONE: (416) 832-7113 FAX: (416) 832-7149

SUPERVISOR:	Mr. Chris S. Brousseau	(832-7113)
COORDINATOR INTERDISCIPLINARY SERVICES:	Dr. Peter E. Ihssen	(832-7164)
COORDINATOR INLAND LAKES:	Dr. David O. Evans	(832-7109)
COORDINATOR GREAT LAKES:	Mr. Stephen Nepszy	(832-4684)

ACTIVITY
The Fisheries Research Section was established to generate new fisheries science to address current and future needs of Ontario's fisheries resource managers and to transfer that science as input to management decisions and policy formulation. The five major areas that are being addressed by the Section are: resource estimation and assessment; impacts of ecological stresses; constraints to rehabilitation; socio-economics of fisheries; and fisheries sampling techniques.

HISTORY
Fisheries Research Section evolved from a close working relationship with staff in the Ontario Fisheries Research Laboratory (OFRL) at the University of Toronto. Beginning in 1936, OFRL established laboratories in Algonquin Park, South Baymouth and Maple. By the mid-1930s, the Ontario Department of Lands and Forests began to assume the responsibility for the operation of these facilities. The process was completed by the mid-1960s. The program has continued to expand in location and scope, yet maintains close association with several Ontario universities.

STAFF AND ORGANIZATION
The Fisheries Research Section employs about 60 full-time staff including 16 research scientists. Administratively, the Section is divided into Interdisciplinary Services, Inland Lakes, Great Lakes Units, Productivity, Timber Effects Monitoring, and Walleye Research.

FACILITIES AND EQUIPMENT
The headquarters for the Fisheries Research Section is located at Maple. In addition to office and laboratories, this facility also supports the fish hatchery associated with fisheries genetic research. Great Lakes Fisheries Units are located in Glenora, Wheatley, and South Baymouth. Inland lakes research is centred in Thunder Bay and in the Harkness Laboratory in Algonquin Park.

DOCUMENTATION
The findings of the Fisheries Research Section are published in the primary scientific literature. In addition, the Section produces a comprehensive bi-annual report.

AREAS OF SPECIAL EXPERTISE
In addition to the Great Lakes Fisheries Units, the Section has specialized Units to address: Stock Assessment and Genetics; Lake Trout Community; Brook Trout Community; Walleye Community; Community Dynamics; Population Dynamics; Stock Dynamics; Salmonid Ecology; Lake and River Productivity; Resource and Community Assessment; Timber Effects; Tourism; and Systems Ecology.

ONTARIO FOREST RESEARCH INSTITUTE
FOREST POLICY BRANCH
MINISTRY OF NATURAL RESOURCES
PO BOX 969, 1235 QUEEN STREET EAST, SAULT STE MARIE, ONTARIO P6A 5N5

PHONE: (705) 946-2981 FAX: (705) 946-2030

GENERAL MANAGER: M.S. Millar R.P.F.
RESEARCH MANAGER: Dr. D. Paul Webb
SUPERVISOR, FOREST PATHOLOGY DIAGNOSTIC LABORATORY: Dr. Tim Meyer

ACTIVITY

The Ontario Forest Research Institute (OFRI) conducts and coordinates forest research to acquire basic and applied knowledge and to ensure its use in the development of forest policy and management practices for the forest ecosystems in Ontario.

HISTORY

In 1945, the then Department of Lands and Forests established a fully operational research division at Maple, north of Toronto. This became the Ontario Tree Improvement and Forest Biomass Institute in 1981. The Institute was renamed the Ontario Forest Research Institute in 1989 and moved to Sault Ste Marie in 1990. In 1991, the Ministry's Applied Science and Technology and Pathology units were merged with OFRI.

STAFF AND ORGANIZATION

OFRI employs 84 staff, including personnel at the Centre for Northern Forest Ecosystem Research (CNFER) in Thunder Bay and at the University of Guelph.

OFRI is presently divided into four main research areas: Tree Improvement/Genetics; Stock Production/Renewal; Stand Dynamics/Silviculture; and Forest Ecosystems/Impacts. The Forest Pathology Diagnostic Laboratory functions as a support component within OFRI. It provides forest pest diagnostic services and management recommendations, plus supports investigative field trial programs to develop alternative pest management strategies, and maintains a nursery data base.

FACILITIES AND EQUIPMENT

The laboratories occupy 2,000 m_2 in the new OFRI building, with an extended greenhouse facility and an off-site arboretum of 86 hectares.

A comprehensive range of forest research equipment is used. This is listed according to function:

1. Sample Extraction
   Grinders, drying oven, freeze dryer, liquid nitrogen, freezers, sieves, soil homogenizers.

2. Biochemical and Chemical Extraction
   Water shaker bath, refrigerated shaker, rotary evaporator, ultra-centrifuge, automated ion-exchange column system, ultrasonic homogenizer, extractors.

3. Pollen and Seed Handling
   Pollen extractors, seed counters, microscopes, aspirator, seed extractor.

4. Biochemical and Chemical Analyses
   High-performance liquid chromatography, thin-layer chromatography, spectrophotometer, spectrofluorometer, densitometer, liquid scintillation counter, starch-gel electrophoresis systems, cellulose acetate electrophoresis system, atomic absorption spectrophotometer, Kjeldahl nitrogen analyzer (Buchi), titrator.

5. Physiological Measurements
   Infra-red gas analyzer, diffusive porometer, differential respirometer, robotic conductivity system, time-domain reflectometry moisture measurement system.

6. Micro-technique
   Photo-macroscope, stereoscopic dissecting microscopes, compound photo-microscope with phase-contrast and fluorescence units, paraffin embedding unit, cryostat microtome, sliding microtome, rotary microtome for paraffin and plastic sectioning.

7. Measurement of Tree Growth by Year
   Tree-ring Increment Measurement (TRIM) System.

8. Measurement of Forest Canopies
   Calorimeter, densitometer, radiometer, digitizer, video scanner.

9. Forest Pathology Diagnostics
   Autoclave, microbial exclusion chambers, microscopic examination equipment.

DOCUMENTATION

The major output of OFRI is papers published in scientific journals and forest management publications. An "Annotated Bibliography 1980-1991" is available. There are also recent publications of the provincial forest pathology program.

AREAS OF SPECIAL EXPERTISE

Fundamental research for solving operational forest management problems. Research in support of the establishment of ecologically viable forests with shorter rotations, better quality, and higher yield. Work in progress covers forest genetics, tree breeding, bio-technology, soil science, forest ecology, stand management, tree physiology, and stock production.

Areas of particular expertise include:

- Biochemical analyses of plant tissues (amino acids, proteins, nucleic acids, hormones, sugars, starches, chlorophylls)
- Chemical analyses of plant tissues, forest soils, and natural waters
- Quantitative analyses of genetic test data
- Estimation of genetic parameters
- Histology of seedling tissues
- Dendrochronology
- Radiation assessment and competition in forest canopies
- Modelling of forest stand dynamics.
- Culture and identification of tree pathogenic fungi
- Pests of containerized and bareroot nursery stock production
- Diseases of intensively managed coniferous plantations
- Diagnosis of stress-related forest tree pathogens

PETROLEUM RESOURCES LABORATORY
SOUTHWESTERN REGION
MINISTRY OF NATURAL RESOURCES
659 EXETER ROAD, LONDON, ONTARIO N6A 4L6

PHONE: (519) 661-2813 FAX: (519) 661-2819

SENIOR PETROLEUM GEOLOGIST: Mr. Terry R. Carter

ACTIVITY

The Petroleum Resources Laboratory is a resource centre for the study of the subsurface geology and petroleum and brine resources of all the potential oil and gas-bearing rocks of Ontario. Its principal function is to provide geological services to the Petroleum Resources Section and Fuel Minerals Section of MNR. Laboratory services and facilities are also utilized by approximately 600 clients from Ontario, Calgary, Michigan, Pennsylvania, Ohio, and other States each year; representing industry, universities, and other government agencies. Part of the building is reserved for public use and can be set-up for educational and scientific workshops and courses.

HISTORY

The Laboratory can trace its origin to the late 1800s and early 1900s, when the Geological Survey of Canada solicited voluntary submissions of drill cuttings and core from oil and gas wells drilled in Ontario and other parts of the country. This informal collection evolved into the establishment of a core and sample processing, storage and study facility in Ottawa. In 1950, a similar facility was established in Calgary and all western Canada samples were transferred to Calgary. In 1971, the Ontario core and cuttings were shipped to the new Petroleum Resources Laboratory in London, Ontario. The Laboratory was originally located in rented facilities at 458 Central Avenue in central London. A new building was constructed at the present location in 1987.

STAFF AND ORGANIZATION

The Petroleum Resources Laboratory has a permanent staff of four, consisting of two geologists, one laboratory technician, and a clerk-typist.

FACILITIES AND EQUIPMENT

The Petroleum Resources Laboratory occupies a 600 m^2 building, located near Highway 401 in the City of London.

Resources available for public study include:

- cuttings samples from approximately 13,000 wells
- cores from over 900 wells
- file information on over 20,000 wells, including well history and construction, geology, fluids, geophysical logs, core analyses, chemical analyses of subsurface fluid samples, etc.
- an extensive collection of publications on subsurface geology.

Laboratory equipment includes:

> a sample washing and drying machine; one 14" and one 6" diameter diamond blade saw; a trinocular petrographic microscope; and five binocular microscopes. (The microscopes are available for on-site use by Laboratory clients.) Other facilities available for client use include: 4 semi-private cubicles; roller tables for display and study of drill core, and a photocopying machine.

Geological staff are available for information and advice.

DOCUMENTATION

Geological staff of the Petroleum Resources Laboratory are responsible for publication of an annual "Oil and gas exploration, drilling and production summary" for Ontario. Abbreviated versions of this information are also published by Northeast Oil World and the Bulletin of the American Association of Petroleum Geologists.

AREAS OF SPECIAL EXPERTISE

The Laboratory specialises in the collection, generation, and dissemination of data, information, and knowledge about the subsurface geology and petroleum and brine resources of Ontario. Areas of particular expertise include:

- subsurface stratigraphy and structure of southern Ontario
- oil and gas reservoirs of southern Ontario
- subsurface mapping techniques
- core and cuttings sample examination techniques
- organization of scientific and educational workshops and courses
- oil and gas exploration, drilling, and production.

ONTARIO HYDRO

Ontario Hydro is a crown corporation operating under the authority of the Power Corporations Act. Ontario Hydro's Research Division supports the design, construction, and operation of the electric power system. It carries out work in the areas of Chemical Research, Environmental Research, Mechanical Research, Metallurgical Research, Civil Research, and Operations Research. It has a staff of about 650 professional, technical and support employees. The Research Division operates an analytical laboratory at its Kipling Avenue site in Toronto.

ANALYTICAL SERVICES SECTION

CHEMICAL RESEARCH DEPARTMENT, ONTARIO HYDRO RESEARCH DIVISION
800 KIPLING AVENUE, TORONTO, ONTARIO M8Z 5S4

PHONE: (416) 231-4111 EXT. 6734 FAX: (416) 231-2877

DIRECTOR OF RESEARCH: Dr. D. Mills
MANAGER, CHEMICAL RESEARCH DEPARTMENT: Mr. D.J.R. Dodd
SUPERVISING CHEMIST, ANALYTICAL SERVICES SECTION: Dr. M.R. Booth

ACTIVITY

The Analytical Services Section supports the work of Ontario Hydro's Research Division, the operating, generating, and transformer stations, and the design and construction functions. It provides chemical analysis services tailored to meet the needs of the electric power industry. Both routine large-volume and specialized custom analyses are carried out. Although most of the analytical chemistry services are for Ontario Hydro, support is provided to other utilities in Ontario.

HISTORY

The Research Division of Ontario Hydro began as a small group that was formed in 1912 to meet requirements for standards and testing. Since that time it has grown with Hydro in experience, size, and reputation. The Division cooperates with other parts of the corporation to provide research and development related to the engineering and operation of the power system and the utilization of electricity. It is a comprehensive, fully integrated, and modern research establishment.

STAFF AND ORGANIZATION

The Analytical Services Section was created in 1969 from the two then-existing sections of the Chemical Research Department. It has a staff of 30, including six professionals.

FACILITIES AND EQUIPMENT

In January 1992, the Section moved into a new, radio-chemical-capable laboratory facility occupying some 2000m^2 of laboratory and office space on the same site as the rest of the Research Division.

The Section is loosely subdivided into three working groups:

- organic analysis
- inorganic analysis
- analysis of radio-active materials.

The major technological areas include:

- analysis of materials related to environmental protection, such as:
  - transformer oils
  - ash leachates
  - spills
  - herbicides
- operations analytical support involves samples such as:
  - boiler waters
  - nuclear reactor decontamination
  - transformer gases
  - metal alloys
  - cements and ceramics
  - coals and oils
  - nuclear fuel rod elements
- Health and Safety related testing includes:
  - air samples for toxics
  - asbestos
  - mercury
  - complex organic compounds.

The laboratory is equipped with modern automated instrumentation, allowing analyses involving the following techniques:

- Gas Chromatography
- Gas Chromatography/Mass Spectrometry
- Ion Chromatography
- Liquid Chromatography
- Fourier Transform Infrared Spectroscopy (including microscope)
- Atomic Absorption Spectrometry
- Hydride Generation Atomic Absorption Spectrometry
- Graphite Furnace Atomic Absorption Spectrometry
- Automated Colorimetry (Technicon etc.)
- Inductively-Coupled Plasma Atomic Emission Spectrometry (simultaneous and sequential)
- Scanning Auger Microprobe
- X-ray Diffraction (powder)
- X-ray Fluorescence
- Gamma Spectrometry
- Liquid Scintillation Counting
- Alpha Spectrometry
- Spectrofluorimetry
- Ultraviolet/Visible Spectrometry
- Mass Spectrometry

AREAS OF SPECIAL EXPERTISE

Chemical analysis of materials used for the generation and transmission of power, including insulating oils (including PCBs, PCB dechlorination byproducts, and PCBs in environmental materials), emissions from power plants, radio-chemical analyses (including conventional analysis of radio-active materials), tritium analysis.

PRINCIPAL CLIENTS

- the research sections of the Division
- Ontario Hydro operations
- other utilities.

CONTACTS DATABASE

The Contacts Database provides in-depth contact information by Name, Position, Telephone Number, Area of Specialization, Analytical Technique/Target, Branch, Ministry, and Location.

The Contacts Database has been developed by Peter Campbell, Ministry of the Environment, as a LOTUS 123 ® Database Table. Users of the database should be aware that this format provides several benefits but also incurs certain limitations.

The principal benefit is that the database may be sorted using any one of the fields listed above. It appears in this publication sorted alphabetically by Ministry and Contact Name. The database is available from the Analytical Laboratories Council on floppy diskette, allowing individual users to sort by any other field, such as 'Technique', 'Contact Name', 'Area of Specialization' etc

The principal limitation is one of space, since each database "cell" is restricted in size to enable each entry to be printed on a single line. Abbreviations have been used in the Analytical Technique, Branch, Ministry, and Location fields. These are explained below.

Database Updates

A form is included on the next-to-last page for additions/corrections to the database. Please return to Dr. Chris Riddle at Management Board. Information received by December 31st will be included in the subsequent annual update.

Database Disks

The LOTUS 123 ® Database Table is available on floppy disk at no charge to all Index owners. To obtain a copy, please sign the agreement at the back of the Index and return this, along with a blank, formatted 3.5" or 5.25" floppy disk to the ALC Secretary.

Analytical Technique Column (Continued)

OES	Optical Emission Spectrometer
OM	Optical Microscope
OS	Organic Synthesis
OSC	Oscilloscope
PAT	Purge & Trap (Sampling)
PC	Phase Contrast
PCR	Polymerase Chain Reaction
PES	Pesticides
PF	Protein Fractionation
PHO	Photoanalysis
PLA	Plasmid Analysis
POL	Polarography
PRA	Protein Analysis
PSA	Particle Size Analysis
PT	Phage Typing
QC	Quality Control
RC	Radiation Counters (α, β, γ)
RD	Radiation Detectors (Environmental, α, β, γ)
REA	Restriction endo-nuclear analysis
REPL-ID	Replicator Identification
RES	Respirator
RG	Ring Grinder
RIA	Radio-immuno-assay
ROB	Robotics
RPLA	Reverse Passive Latex Agglutination
SE	Soil Extractions
SEM	Scanning Electron Microscope
(SEQ)	Sequential
	SEROLOGY
SFC	Segmented Flow Colorimetric system
(SIM)	Simultaneous
SP	Speciation
ST	Sero-Typing
SU	Sugars
TA	Toxin Assay
TC	Tissue Culture
TD	Thermal Desorption
TI	Thermal Ionisation
TIT	Titration System
TLC	Thin Layer Chromatography
TOC	Total Organic Carbon
TPI	Treponema pallidum Immobilization
UV	UV-Visible Spectrometer
VA	Volatile Acids
VDRL	VDRL Syphilis Test
WB	Western Blot
XR	X-Ray Machines (General)
XRD	X-Ray Diffraction
XRF	X-Ray Fluorescence

NOTES:

1. Abbreviations in parentheses are only used as qualifiers - e.g. AAS(G).

2. Entries in UPPER CASE have no abbreviation, they are entered in full.

1992 INDEX OF ANALYTICAL LABORATORIES AND CONTACT POINTS

DATABASE OF LABORATORY CONTACTS
SORTED BY MINISTRY AND NAME

NAME	POSITION	TEL NUMBER	AREA OF SPECIALIZATION	TECHNIQUE	BRA	MIN	LOC
LIQUOR CONTROL BOARD OF ONTARIO							
Falcone, Fernando	Senior Technician	416-864-6724	Alcoholic Bev.	AAS(F,G,C)	LCB	CCR	TOR
Maxwell, Ken	Manager General Lab	416-864-6724	Alcoholic Bev.	SFC	LCB	CCR	TOR
Maxwell, Ken	Manager General Lab	416-864-6724	Alcoholic Bev.	SU	LCB	CCR	TOR
Maxwell, Ken	Manager General Lab	416-864-6724	Alcoholic Bev.	VA	LCB	CCR	TOR
Ng, Eric Ph.D.	Manager Organic/Research	416-864-6724	Alcoholic Bev.	PES	LCB	CCR	TOR
Ng, Eric Ph.D.	Manager Organic/Research	416-864-6724	Alcoholic Bev.	HPLC(FLU)	LCB	CCR	TOR
Tsang, Elisa	Technologist	416-864-6724	Alcoholic Bev.	LC	LCB	CCR	TOR
Tsang, Elisa	Technologist	416-864-6724	Alcoholic Bev.	AAS(G)	LCB	CCR	TOR
Yan, Joseph	Technologist	416-864-6724	Alcoholic Bev.	PES	LCB	CCR	TOR
Yan, Joseph	Technologist	416-864-6724	Alcoholic Bev.	GC(MS)	LCB	CCR	TOR
MINISTRY OF AGRICULTURE AND FOOD							
Binnington, Dr. Brian	Veterinary Pathologist	613-475-1632	Veterinary Pathology		VLS	MAF	BRI
Brash, Dr. Marina L.	Avian Pathologist	519-823-8800x4550	Avian & Fur-bearing Pathology		VLS	MAF	GPH
Burchat, Kathy	Analytical Chemist	519-823-8800x4825	Pesticides	GC	AFL	MAF	GPH
Burchat, Kathy	Analytical Chemist	519-823-8800x4825	Pesticides	MSD	AFL	MAF	GPH
Caldwell, Dr. Don S.	Veterinary Pathologist	613-258-8320	Veterinary Pathology		VLS	MAF	KEM
Carman, Dr. Suzanne	Veterinary Virologist	519-823-8800	Veterinary Virologist	OM	VLS	MAF	GPH
Carman, Dr. Suzanne	Veterinary Virologist	519-823-8800	Veterinary Virologist	EM	VLS	MAF	GPH
Carman, Dr. Suzanne	Veterinary Virologist	519-823-8800	Veterinary Virologist	UV	VLS	MAF	GPH
Chapman, Nicholas	Chief Technician	519 823-8800x4829	Sulfa Drugs	HPLC	AFL	MAF	GPH
Clegg, Steve	Mgr. & Analytical Chemist	519-823-8800x4831	Pesticides, Environment	PES	AFL	MAF	GPH
Clegg, Steve	Mgr. & Analytical Chemist	519-823-8800x4831	Pesticides, Environment	MSD	AFL	MAF	GPH
Clegg, Steve	Mgr. & Analytical Chemist	519-823-8800x4831	Pesticides, Environment	GC	AFL	MAF	GPH
Clegg, Steve	Mgr. & Analytical Chemist	519-823-8800x4831	Pesticides, Environment	HPLC	AFL	MAF	GPH
Clegg, Steve	Mgr. & Analytical Chemist	519-823-8800x4831	Pesticides, Environment	ELISA	AFL	MAF	GPH
Cole, Dr. Wayne D.	Veterinary Pathologist	519-674-5456	Veterinary Pathology		VLS	MAF	RID
Copeland, Dr. Shelagh	Director	705-647-6719	Veterinary Pathology		VLS	MAF	NLI
Dykstra, Marilyn	Director	519-824-4120x2700	Plant Disease & Insect Diagnostics		PDC	MAF	GPH
Ewing, Ron	Scientist	519-823-8800x4521	Toxicology	AAS (F,G,C,H)	AFL	MAF	GPH

NAME	POSITION	TEL NUMBER	AREA OF SPECIALIZATION	TECHNIQUE	BRA	MIN	LOC
Ewing, Ron	Scientist	519–823–8800x4521	Toxicology	GC (MS)	AFL	MAF	GPH
Ewing, Ron	Scientist	519–823–8800x452	Toxicology	FDR	AFL	MAF	GPH
Ewing, Ron	Scientist	519–823–8800x452	Toxicology	MIC	AFL	MAF	GPH
Ewing, Ron	Scientist	519–823–8800x452	Toxicology	TLC	AFL	MAF	GPH
Ewing, Ron	Scientist	519–823–8800x452	Toxicology	HPLC (FLU,UV)	AFL	MAF	GPH
Ford, Ron G.	Technologist	519–823–8800x4522	Diagnostic Parasitology		VLS	MAF	GPH
Fulton, C.	Laboratory Scientist	519–836–5121	Dairy Chemistry	IR	DIB	MAF	GPH
Fulton, C.	Laboratory Scientist	519–836–5121	Dairy Chemistry	CII	DIB	MAF	GPH
Galt, Dr. Doug	Director	613–475–1632	Veterinary Pathology		VLS	MAF	BRI
Gough, Dr. Jiggs F.	Lab Head & Vet. Pathologist	519–674–5456	Veterinary Pathology		VLS	MAF	RID
Hampson, Dr. R.J.	Veterinary Pathologist	519–823–8800x4523	Avian & Fur Bearing Animal Path		VLS	MAF	GPH
Hazlett, Dr. M.J.	Veterinary Pathologist	519–823–8800x4525	Veterinary Pathology		VLS	MAF	GPH
Hoff, Dr. Brent	Clinical Pathologist	519–823–8800x4527	Clinical Veterinary Pathology		VLS	MAF	GPH
Josephson, Dr. Gaylan	Lab Head & Vet. Pathologist	519–228–6691	Veterinary Pathology		VLS	MAF	HUP
Key, Dr. Douglas W.	Virologist	519–823–8800x4524	Avian Virology & Vet. Immunology	ELISA	VLS	MAF	GPH
Key, Dr. Douglas W.	Virologist	519–823–8800x4524	Avian Virology & Vet. Immunology	EM	VLS	MAF	GPH
Lachowsky, W.	Laboratory Scientist	519–836–5121	Dairy Microbiology	OM	DIB	MAF	GPH
Lachowsky, W.	Laboratory Scientist	519–836–5121	Dairy Microbiology	ELISA	DIB	MAF	GPH
Lautenslager, Dr. J.P.	Veterinary Parasitologist	519 823–8800x4534	Parasitology		VLS	MAF	GPH
Lusis, Dr. Peter I.	Veterinary Pathologist	613 258–8321	Veterinary Pathology		VLS	MAF	KEM
Lynch, John A.	Chief Scientist, Microbiology	519–767–3109	Microbiology		AFL	MAF	GPH
Maxie, Dr. M. Grant	Veterinary Pathologist	519 823–8800x4537	Veterinary Pathology		VLS	MAF	GPH
McBride, Karen	Information Technologist	519–823–8800x4556	Information Technology		VLS	MAF	GPH
Melichercik, J.	Laboratory Scientist	519–836–5121	Dairy Chemist	ELE	DIB	MAF	GPH
Melichercik, J.	Laboratory Scientist	519–836–5121	Dairy Chemist	TIT	DIB	MAF	GPH
Mitchell, M.	Laboratory Scientist	519–836–5121	Dairy Microbiology	OM	DIB	MAF	GPH
Mitchell, M.	Laboratory Scientist	519–836–5121	Dairy Microbiology	ELISA	DIB	MAF	GPH
Palmer, Dr. Nigel C.	Veterinary Pathologist	519–823–8800x4540	Veterinary Pathology		VLS	MAF	GPH
Rae, Dr. Cathy	Veterinary Pathologist	613–475–1632	Veterinary/Clinical Pathology		VLS	MAF	BRI
Rehmtulla, Dr. Ab	Veterinary Pathologist	519–228–6691	Veterinary Pathology		VLS	MAF	HUP
Ripley, Dr. Brian D.	Chief Chemist	519–823–8800x4828	Pesticides, Food, Environment	CII	AFL	MAF	GPH

NAME	POSITION	TEL NUMBER	AREA OF SPECIALIZATION	TECHNIQUE	BRA	MIN	LOC
Ripley, Dr. Brian D.	Chief Chemist	519-823-8800x4828	Pesticides, Food, Environment	MSD	AFL	MAF	GPH
Ripley, Dr. Brian D.	Chief Chemist	519-823-8800x4828	Pesticides, Food, Environment	LC	AFL	MAF	GPH
Ripley, Dr. Brian D.	Chief Chemist	519-823-8800x4828	Pesticides, Food, Environment	GC	AFL	MAF	GPH
Ruhnke, Louise	Microbiologist	519-823-8800x4556	Microbiology/Mycoplasmology	CEN	VLS	MAF	GPH
Ruhnke, Louise	Microbiologist	519-823-8800x4556	Microbiology/Mycoplasmology	ELISA	VLS	MAF	GPH
Ruhnke, Louise	Microbiologist	519-823-8800x4556	Microbiology/Mycoplasmology	FDR	VLS	MAF	GPH
Ruhnke, Louise	Microbiologist	519-823-8800x4556	Microbiology/Mycoplasmology	FRE	VLS	MAF	GPH
Ruhnke, Louise	Microbiologist	519-823-8800x4556	Microbiology/Mycoplasmology	OM(FLU)	VLS	MAF	GPH
Sanford, Dr. Ernie S.	Veterinary Pathologist	519-228-6691x276	Veterinary Pathology		VLS	MAF	HUP
Shapiro, Dr. Janet L.	Veterinary Pathologist	613-258-8320	Veterinary Pathology		VLS	MAF	GPH
Spilsburg, Louise	Chromatographic Specialist	519-836-5121	Fats and oil	HPLC	DIB	MAF	GPH
Spilsburg, Louise	Chromatographic Specialist	519-836-5121	Fats and oil	GC	DIB	MAF	GPH
Stevenson, Dr. Dan A.	Lab Head & Vet. Pathologist	613-258-8320	Veterinary Pathology		VLS	MAF	KEM
Stonefield, Kozoh	Scientist	519-823-8800x4833	Herbicides	GC	AFL	MAF	GPH
Suda, Prem	Technician	519-823-8800x4833	Trace Metals	AAS (G,H)	AFL	MAF	GPH
Szijarto, Dr. L.F.	Manager	519-836-5121	Dairy Chemistry	IR	DIB	MAF	GPH
Thomson, Dr. Gary	Veterinary Pathologist	519-823-8800	Veterinary Pathology	OM	VLS	MAF	GPH
Van Dreumel, Dr.Tony	Veterinary Pathologist	519-823-8800x4545	Veterinary Pathology		VLS	MAF	GPH
Wilson, Dr. R.W.	Veterinary Pathologist	519-823-8800	Veter.Path.		VLS	MAF	GPH
Yui, Dr. Suk H.	Project Leader	519-767-3121	Food Chemistry & Nutrient Analysis	AAS	AFL	MAF	GPH
Yui, Dr. Suk H.	Project Leader	519-767-3121	Food Chemistry & Nutrient Analysis	ELE	AFL	MAF	GPH
Yui, Dr. Suk H.	Project Leader	519-767-3121	Food Chemistry & Nutrient Analysis	ELISA	AFL	MAF	GPH
Yui, Dr. Suk H.	Project Leader	519-767-3121	Food Chemistry & Nutrient Analysis	EM	AFL	MAF	GPH
Yui, Dr. Suk H.	Project Leader	519-767-3121	Food Chemistry & Nutrient Analysis	FLU	AFL	MAF	GPH
Yui, Dr. Suk H.	Project Leader	519-767-3121	Food Chemistry & Nutrient Analysis	HPLC	AFL	MAF	GPH
Yui, Dr. Suk H.	Project Leader	519-767-3121	Food Chemistry & Nutrient Analysis	OM	AFL	MAF	GPH
Yui, Dr. Suk H.	Project Leader	519-767-3121	Food Chemistry & Nutrient Analysis	SEM	AFL	MAF	GPH
Yui, Dr. Suk H.	Project Leader	519-767-3121	Food Chemistry & Nutrient Analysis	TLC	AFL	MAF	GPH
Yui, Dr. Suk H.	Project Leader	519-767-3121	Food Chemistry & Nutrient Analysis	UV	AFL	MAF	GPH
Zellen, Dr. Gwen	Laboratory Head	519-823-8800	Animal Pathology		VLS	MAF	GPH

NAME	POSITION	TEL NUMBER	AREA OF SPECIALIZATION	TECHNIQUE	BRA	MIN	LOC
MINISTRY OF THE ENVIRONMENT							
Ahmad, Dr, Ijaz	Contam.Research Scientist	416-235-6014	Environmental Chemistry	HPLC	LSB	MOE	REX
Ahmad, Dr, Ijaz	Contam.Research Scientist	416-235-6014	Environmental Chemistry	GC	LSB	MOE	REX
Ahmad, Dr, Ijaz	Contam.Research Scientist	416-235-6014	Environmental Chemistry	UV	LSB	MOE	REX
Alfieri, Angelo	Advancd.Instrum.Scientist	416-235-6001	Organic Chemistry	IR	LSB	MOE	REX
Barnes, Stu	Soils Scientist	705-766-2412	Inorganic Environmental Chemistry	GC(MS)	LSB	MOE	REX
Barnes, Stu	Soils Scientist	705-766-2412	Inorganic Environmental Chemistry	AAS	LSB	MOE	DOR
Berg, Bill	A/Manager	416-235-5907	Drinking Water Organics	ISE	LSB	MOE	DOR
Berg, Bill	A/Manager	416-235-5907	Volatile Organics	SFC	LSB	MOE	DOR
Boomer, David	Spectroscopy/Waters Coord.	416-235-5858	Environmental Chemistry	GC	LSB	MOE	REX
Boomer, David	Spectroscopy/Waters Coord.	416-235-5858	Environmental Chemistry	MS	LSB	MOE	REX
Boomer, David	Spectroscopy/Waters Coord.	416-235-5858	Environmental Chemistry	ICP(OES,MS)	LSB	MOE	REX
Campbell, Dr. Ben	Shift Superv/Project Scientist	416-235-6072	Environmental Chemistry	XRF	LSB	MOE	REX
Campbell, Dr. Ben	Shift Superv/Project Scientist	416-235-6072	Environmental Chemistry	CII	LSB	MOE	REX
Campbell, Dr. Ben	Shift Superv/Project Scientist	416-235-6072	Environmental Chemistry	HPLC	LSB	MOE	REX
Campbell, Dr. Ben	Shift Superv/Project Scientist	416-235-6072	Environmental Chemistry	DCP	LSB	MOE	REX
Campbell, Peter	Superv, MISA,BOD, Solids	416-235-5872	Environmental Chemistry	MIC	LSB	MOE	REX
Campbell, Peter	Superv, MISA,BOD, Solids	416-235-5872	Environmental Chemistry	GC	LSB	MOE	REX
Cheung, Ben	Scientist	416-235-5870	Environmental Chemistry	TOC	LSB	MOE	REX
Cheung, Ben	Scientist	416-235-5870	Environmental Chemistry	ROB	LSB	MOE	REX
Cheung, Ben	Scientist	416-235-5870	Environmental Chemistry	RES	LSB	MOE	REX
Chony, Alice J.	Microbiology Supervisor	807-475-1275	Environmental Microbiology	DO	LSB	MOE	REX
Chony, Alice J.	Microbiology Supervisor	807-475-1275	Environmental Microbiology	UV	LSB	MOE	REX
Chony, Alice J.	Microbiology Supervisor	807-475-1275	Environmental Microbiology	OM	RL	MOE	TB
Chuchman, Ross	Inorg.Scientist,Trace Comtam	807-475-1275	Inorganic Analytical Chemistry	IN	RL	MOE	TB
Chuchman, Ross	Inorg.Scientist,Trace Comtam	807-475-1275	Inorganic Analytical Chemistry	AC	RL	MOE	TB
Chun, Charles	Aquatic Scientist	705-766-2412	Inorganic Environmental Chemistry	ICP	RL	MOE	TB
Chun, Charles	Aquatic Scientist	705-766-2412	Inorganic Environmental Chemistry	AAS(F,H,C)	LSB	MOE	DOR
Chun, Charles	Aquatic Scientist	705-766-2412	Inorganic Environmental Chemistry	SFC	LSB	MOE	DOR
			Inorganic Environmental Chemistry	TIT	LSB	MOE	DOR
				SP(AI)	LSB	MOE	DOR

NAME	POSITION	TEL NUMBER	AREA OF SPECIALIZATION	TECHNIQUE	BRA	MIN	LOC
Clark, James A.	Microbiology Supervisor	416-235-5883	Environmental Microb	AC	LSB	MOE	REX
Clark, James A.	Microbiology Supervisor	416-235-5883	Environmental Microb	OM	LSB	MOE	REX
Clark, James A.	Microbiology Supervisor	416-235-5883	Environmental Microb	IN	LSB	MOE	REX
Clark, Richard	A/Superv. Trace Contam	807-475-1275	Organic & Inorganic Analysis	CII	RL	MOE	TB
Clark, Richard	A/Superv. Trace Contam	807-475-1275	Organic & Inorganic Analysis	AAS	RL	MOE	TB
Clark, Richard	A/Superv. Trace Contam	807-475-1275	Organic & Inorganic Analysis	GC	RL	MOE	TB
Clement, Dr. Ray E.	Sr. R&D Coordinator	416-235-5906	Dioxins, Furans	GC	LSB	MOE	REX
Clement, Dr. Ray E.	Sr. R&D Coordinator	416-235-5906	Dioxins, Furans	MS	LSB	MOE	REX
Coceancic, Dean	A/Scientist Trace Org.	807-475-1275	Organic Analytical	CII	RL	MOE	TB
Coceancic, Dean	A/Scientist Trace Org.	807-475-1275	Organic Analytical	GC	RL	MOE	TB
Coceancic, Dean	A/Scientist Trace Org.	807-475-1275	Organic Analytical	AAS(C)	RL	MOE	TB
Cotter, Colleen M	Microbiol/QA Scientist	807-475-1275	Environmental Microbiology	AC	RL	MOE	TB
Cotter, Colleen M	Microbiol/QA Scientist	807-475-1275	Environmental Microbiology	IN	RL	MOE	TB
Cotter, Colleen M	Microbiol/QA Scientist	807-475-1275	Environmental Microbiology	OM	RL	MOE	TB
Crozier, Patrick W.	Method Development Sci.	416-235-5910	Organic Chemistry	GC	LSB	MOE	REX
Crozier, Patrick W.	Method Development Sci.	416-235-5910	Organic Chemistry	MS	LSB	MOE	REX
Crozier, Patrick W.	Method Development Sci.	416-235-5910	Organic Chemistry	HPLC	LSB	MOE	REX
Hall, Dr. C. David	Supervisor	416-235-5910	Drinking Water Organics	GC	LSB	MOE	REX
Mills, Janet	Hazardous Waste Scientist	416-235-6075	Environmental Chemistry	PAT	LSB	MOE	REX
Mills, Janet	Hazardous Waste Scientist	416-235-6075	Environmental Chemistry	HED	LSB	MOE	REX
Mills, Janet	Hazardous Waste Scientist	416-235-6075	Environmental Chemistry	GC-MSD	LSB	MOE	REX
Mills, Janet	Hazardous Waste Scientist	416-235-6075	Environmental Chemistry	GC	LSB	MOE	REX
Hipfner, Dr. Jerry	Supervisor Air Emissions	416-235-5856	Environmental Chemistry	SFC	LSB	MOE	REX
Hipfner, Dr. Jerry	Supervisor Air Emissions	416-235-5856	Environmental Chemistry	IC	LSB	MOE	REX
Lega, Rocsana	Organic Analyst	416-235-5758	Environmental Chemistry	GC	LSB	MOE	REX
Lega, Rocsana	Organic Analyst	416-235-5758	Environmental Chemistry	HPLC	LSB	MOE	REX
Lega, Rocsana	Organic Analyst	416-235-5758	Environmental Chemistry	OS	LSB	MOE	REX
Ley, Dr. Arthur	Microbiology Scientist	613-549-4000	Environ.Microbiology/Chemistry		RL	MOE	LON
Lo, Frank	Supervisor	416-235-5875	Environmental Chemistry	AAS(F)	LSB	MOE	REX
Lo, Frank	Supervisor	416-235-5875	Environmental Chemistry	ICP	LSB	MOE	REX
Lo, Frank	Supervisor	416-235-5875	Environmental Chemistry	IC	LSB	MOE	REX

NAME	POSITION	TEL NUMBER	AREA OF SPECIALIZATION	TECHNIQUE	BRA	MIN	LOC
Ludwig, Jerry	Advancd.Instrum.Scientist	416-235-5982	GC/MS, Robotics,Computer Progm	ROB	LSB	MOE	REX
Ludwig, Jerry	Advancd.Instrum.Scientist	416-235-5982	GC/MS, Robotics,Computer Progm	MSD	LSB	MOE	REX
McBride, Jenifer	Nutrient Unit Leader	416-235-5879	Chemistry-Environmental	TIT	LSB	MOE	REX
McBride, Jenifer	Nutrient Unit Leader	416-235-5879	Chemistry-Environmental	SFC	LSB	MOE	REX
McBride, Jenifer	Nutrient Unit Leader	416-235-5879	Chemistry-Environmental	AAS(F)	LSB	MOE	REX
McBride, Jenifer	Nutrient Unit Leader	416-235-5879	Chemistry-Environmental	IC	LSB	MOE	REX
Mercer, Dr. Roger	Scientist	416-235-5890	Dioxins, Furans	GC	LSB	MOE	REX
Mercer, Dr. Roger	Scientist	416-235-5890	Dioxins, Furans	MS	LSB	MOE	REX
Mercer, Dr. Roger	Scientist	416-235-5890	Dioxins, Furans	CII	LSB	MOE	REX
Meresz, Otto	Sr. Environmental Scientist	416-235-5872	Organic Chemistry	OS	LSB	MOE	REX
Meresz, Otto	Sr. Environmental Scientist	416-235-5872	Organic Chemistry	GC	LSB	MOE	REX
Moody, W.B.	Supervisor Microscop/Litig.	416-235-5863	Idnt(Phys,Elem)	EM	LSB	MOE	REX
Moody, W.B.	Supervisor Microscop/Litig.	416-235-5863	Idnt(Phys,Elem)	OM	LSB	MOE	REX
Mo, Frank	Metals Scientist	519-661-2267	Metal Analyses Environ.Samples	ICP	RL	MOE	LON
Mo, Frank	Metals Scientist	519-661-2267	Metal Analyses Environ.Samples	AAS	RL	MOE	LON
Neary, Anne	Field Lab Supervisor	705-766-2412	Environmental Chemistry	AAS	LSB	MOE	DOR
Neary, Anne	Field Lab Supervisor	705-766-2412	Environmental Chemistry	PSA	LSB	MOE	DOR
Neary, Anne	Field Lab Supervisor	705-766-2412	Environmental Chemistry	SE	LSB	MOE	DOR
Palmateer, Garry	Head Microbiology	519-661-2268	Environmental Microbiology		RL	MOE	LON
Petranovic, Mira I.	MOE Lab Services Branch	416-235-5845	Environmental Chemistry	TLC	LSB	MOE	REX
Petranovic, Mira I.	MOE Lab Services Branch	416-235-5845	Environmental Chemistry	GC	LSB	MOE	REX
Petranovic, Mira I.	MOE Lab Services Branch	416-235-5845	Environmental Chemistry	UV	LSB	MOE	REX
Petranovic, Mira I.	MOE Lab Services Branch	416-235-5845	Environmental Chemistry	IR	LSB	MOE	REX
Petranovic, Mira I.	MOE Lab Services Branch	416-235-5845	Environmental Chemistry	FT-IR	LSB	MOE	REX
Pimenta, Dr. Jim	Superv. Ind/Domestic Waste	416-235-5854	Environmental Chemistry	DCP	LSB	MOE	REX
Pimenta, Dr. Jim	Superv. Ind/Domestic Waste	416-235-5854	Environmental Chemistry	CHN	LSB	MOE	REX
Pimenta, Dr. Jim	Superv. Ind/Domestic Waste	416-235-5854	Environmental Chemistry	ICP	LSB	MOE	REX
Rawlings, Michael	Supervisor (Colourimetry)	416-235-5880	Environmental Chemistry	SFC	LSB	MOE	REX
Reiner, Eric J.	A/Supervisor	416-235-5893	Dioxins, Furans	GC	LSB	MOE	REX
Reiner, Eric J.	A/Supervisor	416-235-5893	Organic Characterization	MS	LSB	MOE	REX
Remmen, Shirley	Water Quality Supervisor	807-475-1275	Environmental Chemistry	IC	LSB	MOE	TB

NAME	POSITION	TEL NUMBER	AREA OF SPECIALIZATION	TECHNIQUE	BRA	MIN	LOC
Remmen, Shirley	Water Quality Supervisor	807-475-1275	Environmental Chemistry	SFC	LSB	MOE	TB
Remmen, Shirley	Water Quality Supervisor	807-475-1275	Environmental Chemistry	AAS(F)	LSB	MOE	TB
Sadana, Ram	Superv.Biomat/Hyd-AAS	416-235-5861	Environmental Chemistry	POL	LSB	MOE	REX
Sadana, Ram	Superv.Biomat/Hyd-AAS	416-235-5861	Environmental Chemistry	AAS(C,H,G)	LSB	MOE	REX
Sage, Michael	Air Analysis Scientist	416-235-5983	Environmental Chemistry	GC	LSB	MOE	REX
Sage, Michael	Air Analysis Scientist	416-235-5983	Environmental Chemistry	TD	LSB	MOE	REX
Sturgis, David	Air Quality Scientist	416-235-5850	Environmental Chemistry	AAS(G)	LSB	MOE	REX
Sturgis, David	Air Quality Scientist	416-235-5850	Environmental Chemistry	SFC	LSB	MOE	REX
Taguchi, Dr. Vince Y.	Supervisor	416-235-5902	Organic Characterization	GC	LSB	MOE	REX
Taguchi, Dr. Vince Y.	Supervisor	416-235-5902	Organic Characterization	MS	LSB	MOE	REX
Taguchi, Dr. Vince Y.	Supervisor	416-235-5902	Organic Characterization	HPLC	LSB	MOE	REX
Takeuchi, Dallas	Supervisor Organics Section	519-661-2241	Priority Pollutant Organics	GC-MSD	RL	MOE	LON
Toner, Dan	Supervisor	416-235-5755	Organics - Biota, Sediments	GC	LSB	MOE	REX
Tuomi, Mary Ann C	Water Quality Scientist	807-475-1275	Analytical Chemist, Conventionals	IC	RL	MOE	TB
Tuomi, Mary Ann C	Water Quality Scientist	807-475-1275	Analytical Chemist, Conventionals	TIT	RL	MOE	TB
Tuomi, Mary Ann C	Water Quality Scientist	807-475-1275	Analytical Chemist, Conventionals	SFC	RL	MOE	TB
Wee, Pamela	Spectroscopy Scientist	416-235-6073	Environmental Chemistry	ICP-OES	LSB	MOE	REX
Wilson, Peter	Scientist,Municipal & Indust.	416-235-6094	Environmental Chemistry	TOC	LSB	MOE	REX
Wilson, Peter	Scientist,Municipal & Indust.	416-235-6094	Environmental Chemistry	ISE	LSB	MOE	REX
Wilson, Peter	Scientist,Municipal & Indust.	416-235-6094	Environmental Chemistry	SFC	LSB	MOE	REX
Yang, Dr. Paul	Scientist	416-235-6005	Vibrational Spectroscopy	FLU	LSB	MOE	REX
Yang, Dr. Paul	Scientist	416-235-6005	Vibrational Spectroscopy	FT-UV-IR	LSB	MOE	REX
MINISTRY OF HEALTH							
Albreish, Mr. Saleh	Head Technologist	416-235-5996	Mycology - Medical	CULTURE	LSB	MOH	TOR
Albreish, Mr. Saleh	Head Technologist	416-235-5996	Mycology - Medical	OM	LSB	MOH	TOR
Aldom, Mr. John	Head Technologist,	519-455-9310	Bacteriology - Clinical	CULTURE	LSB	MOH	LON
Aldom, Mr. John	Head Technologist,	519-455-9310	Bacteriology - Clinical	OM	LSB	MOH	LON
Andrade, Mrs. Eppie	Head Tech.(Urin.&Resp.)	416-235-5711	Bacteriology-Mycoplasma	CULTURE	LSB	MOH	TOR
Andrade, Mrs. Eppie	Head Tech.(Urin.&Resp.)	416-235-5711	Bacteriology-Mycoplasma	OM	LSB	MOH	TOR

NAME	POSITION	TEL NUMBER	AREA OF SPECIALIZATION	TECHNIQUE	BRA	MIN	LOC
Andrade, Mrs. Eppie	Head Tech.(Urin.&Resp.)	416-235-5711	Bacteriology-Mycoplasma	FLU	LSB	MOH	TOR
Andrade, Mrs. Eppie	Head Tech.(Urin.&Resp.)	416-235-5711	Bacteriology-Mycoplasma	PC	LSB	MOH	TOR
Andrade, Mrs. Eppie	Head Tech.(Urin.&Resp.)	416-235-5711	Bacteriology-Bordetella	CULTURE	LSB	MOH	TOR
Andrade, Mrs. Eppie	Head Tech.(Urin.&Resp.)	416-235-5711	Bacteriology-Bordetella	OM	LSB	MOH	TOR
Andrade, Mrs. Eppie	Head Tech.(Urin.&Resp.)	416-235-5711	Bacteriology-Bordetella	FLU	LSB	MOH	TOR
Andrade, Mrs. Eppie	Head Tech.(Urin.&Resp.)	416-235-5711	Bacteriology-Bordetella	PC	LSB	MOH	TOR
Ball, Dr. Frederick R.	Director	807-622-6449	Virology	CULTURE	RL	MOH	TB
Ball, Dr. Frederick R.	Director	807-622-6449	Virology	EM	RL	MOH	TB
Ball, Dr. Frederick R.	Director	807-622-6449	Virology	IEM	RL	MOH	TB
Ball, Dr. Frederick R.	Director	807-622-6449	Virology	ELISA	RL	MOH	TB
Ball, Dr. Frederick R.	Director	807-622-6449	Microbiology - Clinical	CULTURE	RL	MOH	TB
Ball, Dr. Frederick R.	Director	807-622-6449	Microbiology - Clinical	OM	RL	MOH	TB
Ball, Dr. Frederick R.	Director	807-622-6449	Microbiology - Clinical	FLU	RL	MOH	TB
Bart, Mrs. Barbara	Head Technologist,	416-385-5379	Bacteriology - Clinical	CULTURE	RL	MOH	HAM
Bart, Mrs. Barbara	Head Technologist,	416-385-5379	Bacteriology - Clinical	OM	RL	MOH	HAM
Bart, Mrs. Barbara	Head Technologist,	416-385-5379	Bacteriology - Clinical	FLU	RL	MOH	HAM
Bart, Mrs. Barbara	Head Technologist,	416-385-5379	Parasitology	OM	RL	MOH	HAM
Bart, Mrs. Barbara	Head Technologist,	416-385-5379	Parasitology	FLU	RL	MOH	HAM
Bart, Mrs. Barbara	Head Technologist,	416-385-5379	Parasitology	PC	RL	MOH	HAM
Bart, Mrs. Barbara	Head Technologist,	416-385-5379	Mycology	CULTURE	RL	MOH	HAM
Bart, Mrs. Barbara	Head Technologist,	416-385-5379	Mycology	OM	RL	MOH	HAM
Bart, Mrs. Barbara	Head Technologist,	416-385-5379	Mycology	PC	RL	MOH	HAM
Bidal, Mrs. Francine	Head Technologist	705-523-6917	Bacteriology -Environmental	CULTURE	RL	MOH	SUD
Bidal, Mrs. Francine	Head Technologist	705-523-6917	Bacteriology -Environmental	OM	RL	MOH	SUD
Bidal, Mrs. Francine	Head Technologist	705-523-6917	Serology,	AGG	RL	MOH	SUD
Bishai, Dr. Fouad	Research Scientist	416-235-5736	Virology - Hepatitis A,B,C,D,E	RIA	LSB	MOH	TOR
Bishai, Dr. Fouad	Research Scientist	416-235-5736	Virology - Hepatitis A,B,C,D,E	ELISA	LSB	MOH	TOR
Bishai, Dr. Fouad	Research Scientist	416-235-5736	Virology - Hepatitis A,B,C,D,E	DNA-Hyb	LSB	MOH	TOR
Bishai, Dr. Fouad	Research Scientist	416-235-5736	Virology - Hepatitis A,B,C,D,E	PCR	LSB	MOH	TOR
Bishai, Dr. Fouad	Research Scientist	416-235-5736	Virology - Influenza A,B, Para	ELISA	LSB	MOH	TOR
Bishai, Dr. Fouad	Research Scientist	416-235-5736	Virology - Influenza A,B, Para	GE	LSB	MOH	TOR

NAME	POSITION	TEL NUMBER	AREA OF SPECIALIZATION	TECHNIQUE	BRA	MIN	LOC
Bishai, Dr. Fouad	Research Scientist	416-235-5736	Virology - Gastroenteritis	GE	LSB	MOH	TOR
Bishai, Dr. Fouad	Research Scientist	416-235-5736	Virology - Gastroenteritis	WB	LSB	MOH	TOR
Bishai, Dr. Fouad	Research Scientist	416-235-5736	Virology - Gastroenteritis	TC	LSB	MOH	TOR
Bishai, Dr. Fouad	Research Scientist	416-235-5736	Virology - Gastroenteritis	IEM	LSB	MOH	TOR
Bishai, Dr. Fouad	Research Scientist	416-235-5736	Virology - Rapid Diagnosis	MAP	LSB	MOH	TOR
Boleszczuk, Mr. Peter	Head Technologist	416-235-5718	Bacteriology - Environmental	PCR	LSB	MOH	TOR
Boleszczuk, Mr. Peter	Head Technologist	416-235-5718	Bacteriology - Environmental	MD	LSB	MOH	TOR
Borczyk, Mr. A.	Chief, Reference Bacteriology	416-235-5707	Bacteriology - Enteric Pathogens	QC	LSB	MOH	TOR
Borczyk, Mr. A.	Chief, Reference Bacteriology	416-235-5707	Bacteriology - Enteric Pathogens	BT	LSB	MOH	TOR
Borczyk, Mr. A.	Chief, Reference Bacteriology	416-235-5707	Bacteriology - Enteric Pathogens	ID	LSB	MOH	TOR
Borst, Dr. Ian	Chief D Testing Laboratory	416-235-5929	Pharmaceut.Analys/Enq.on Drug Anal.	ST	LSB	MOH	TOR
Borst, Dr. Ian	Chief D Testing Laboratory	416-235-5929	Pharmaceut.Analys/Enq.on Drug Anal.	HPLC	DPB	MOH	REX
Bragagnolo, Mr. Gary	Head Technologist,	416-235-5715	Serology - Venereal	GC	DPB	MOH	REX
Bragagnolo, Mr. Gary	Head Technologist,	416-235-5715	Serology - Venereal	VDRL	LSB	MOH	TOR
Breton, Mrs. Susan	Senior Technologist	705-254-7132	Bacteriology - Environmental	CF	LSB	MOH	TOR
Breton, Mrs. Susan	Senior Technologist	705-254-7132	Microbiology - Clinical	Culture	RL	MOH	SSM
Brodsky, Mr. Michael	Chief of Section	416-235-5717	Bacteriology - Environmental	Culture	RL	MOH	SSM
Brodsky, Mr. Michael	Chief of Section	416-235-5717	Bacteriology - Environmental	MD	LSB	MOH	TOR
Brown, Ms. Shirley	Head Tech.(Suscep.Test)	416-235-5706	Bacteriology - Clinical	QC	LSB	MOH	TOR
Brown, Ms. Shirley	Head Tech.(Suscep.Test)	416-235-5706	Bacteriology - Clinical	MIC	LSB	MOH	TOR
Brown, Ms. Shirley	Head Tech.(Suscep.Test)	416-235-5706	Bacteriology - Clinical	BD	LSB	MOH	TOR
Brown, Ms. Shirley	Head Tech.(Suscep.Test)	416-235-5706	Bacteriology - Clinical	DS	LSB	MOH	TOR
Brown, Ms. Shirley	Head Technologist,	416-235-5706	Bacteriology - Clinical	AGAR	LSB	MOH	TOR
Cahoon, Mr. Fred	Director	705-267-6633	Microbiology - Clinical	REPL-ID	LSB	MOH	TOR
Cahoon, Mr. Fred	Director	705-267-6633	Microbiology - Clinical	CULTURE	RL	MOH	TIM
Cahoon, Mr. Fred	Director	705-267-6633	Microbiology - Clinical	OM	RL	MOH	TIM
Cahoon, Mr. Fred	Director	705-267-6633	Microbiology - Clinical	ELISA	RL	MOH	TIM
Chagla, Dr. Abdul H.	Director	519-455-9310	Microbiology - Clinical, Environmental	FLU	RL	MOH	TIM
Chagla, Dr. Abdul H.	Director	519-455-9310	Microbiology - Clinical, Environmental	CULTURE	RL	MOH	LON
Chagla, Dr. Abdul H.	Director	519-455-9310	Microbiology - Clinical, Environmental	OM	RL	MOH	LON
				FLU	RL	MOH	LON

NAME	POSITION	TEL NUMBER	AREA OF SPECIALIZATION	TECHNIQUE	BRA	MIN	LOC
Chang, Mrs. Dorothy	Head Technologist,	416-235-5705	Bacteriology -Aerobes	DTA	LSB	MOH	TOR
Chang, Mrs. Dorothy	Head Technologist,	416-235-5705	Bacteriology -Aerobes	AIN	LSB	MOH	TOR
Chang, Mrs. Dorothy	Head Technologist,	416-235-5705	Bacteriology -Aerobes	ID	LSB	MOH	TOR
Chang, Mrs. Dorothy	Head Technologist,	416-235-5705	Bacteriology -Aerobes	ST	LSB	MOH	TOR
Chen, Mr. Alec	Head Technologist,	705-254-7132	Microbiology - Clinical	ELE	LSB	MOH	TOR
Chen, Mr. Alec	Head Technologist,	705-254-7132	Microbiology - Clinical	OM (FLU)	RL	MOH	SSM
Chen, Mr. Alec	Head Technologist,	705-254-7132	Microbiology - Clinical	CULTURE	RL	MOH	SSM
Chu, Mr. Joseph	Chief Technologist	416-235-5715	Serology	GC	RL	MOH	SSM
Chu, Mr. Joseph	Chief Technologist	416-235-5715	Serology	AIN	LSB	MOH	TOR
Ciebin, Mr. Bruce	Research Scientist	416-235-5716	Bacteriology - Environmental	TPI	LSB	MOH	TOR
Ciebin, Mr. Bruce	Research Scientist	416-235-5716	Bacteriology - Environmental	CC	LSB	MOH	TOR
Ciebin, Mr. Bruce	Research Scientist	416-235-5716	Bacteriology - Environmental	IA	LSB	MOH	TOR
Ciebin, Mr. Bruce	Research Scientist	416-235-5716	Bacteriology - Environmental	MT	LSB	MOH	TOR
Ciebin, Mr. Bruce	Research Scientist	416-235-5716	Bacteriology - Environmental	CULTURE	LSB	MOH	TOR
Ciebin, Mr. Bruce	Research Scientist	416-235-5716	Bacteriology - Environmental	GE	LSB	MOH	TOR
Crowley, Mrs. Isabelle	Head Technologist,	519-969-4341	Bacteriology - Laboratory Biosafety	FLR	LSB	MOH	TOR
Crowley, Mrs. Isabelle	Head Technologist,	519-969-4341	Bacteriology - Clinical environmental	MP	RL	MOH	WIN
Crowley, Mrs. Isabelle	Head Technologist,	519-969-4341	Bacteriology - Environmental	CULTURE	RL	MOH	WIN
Crowley, Mrs. Isabelle	Head Technologist,	519-969-4341	Bacteriology - Environmental	OM	RL	MOH	WIN
Dular, Dr. Ram	Scientist	613-736-6800	Microbiology - Mycoplasma	FLU	RL	MOH	WIN
Eastmond, Mr. Hugh	Head, Media Department	416-235-5934	Microbiology	MD	RL	MOH	OTT
Eastmond, Mr. Hugh	Head, Media Department	416-235-5934	Microbiology	MP	LSB	MOH	TOR
Eddington, Mr. Robin	Head Technologist,	705-325-7449	Microbiology - Parasitology	AC	LSB	MOH	TOR
Eddington, Mr. Robin	Head Technologist,	705-325-7449	Microbiology - TB	OM	RL	MOH	ORI
Eddington, Mr. Robin	Head Technologist,	705-325-7449	Microbiology - TB	BACTEC	RL	MOH	ORI
Eddington, Mr. Robin	Head Technologist,	705-325-7449	Microbiology - TB	OM	RL	MOH	ORI
Eddington, Mr. Robin	Head Technologist,	705-325-7449	Microbiology - Chlamydia	FLU	RL	MOH	ORI
Eddington, Mr. Robin	Head Technologist,	705-325-7449	Microbiology - Chlamydia	CULTURE	RL	MOH	ORI
Eng, Mr. Richard	Chief Technologist	613-548-6630	Bacteriology - Clinical	ELISA	RL	MOH	ORI
				CULTURE	RL	MOH	KIN

NAME	POSITION	TEL NUMBER	AREA OF SPECIALIZATION	TECHNIQUE	BRA	MIN	LOC
Eng, Mr. Richard	Chief Technologist	613-548-6630	Bacteriology - Clinical	OM	RL	MOH	KIN
Eng, Mr. Richard	Chief Technologist	613-548-6630	Bacteriology - Clinical	FLU	RL	MOH	KIN
Eng, Mr. Richard	Chief Technologist	613-548-6630	Serology	ELISA	RL	MOH	KIN
Eng, Mr. Richard	Chief Technologist	613-548-6630	Serology	CF	RL	MOH	KIN
Eng, Mr. Richard	Chief Technologist	613-548-6630	Serology	AGG	RL	MOH	KIN
Eng, Mr. Richard	Chief Technologist	613-548-6630	Mycology	CULTURE	RL	MOH	KIN
Eng, Mr. Richard	Chief Technologist	613-548-6630	Mycology	OM	RL	MOH	KIN
Eng, Mr. Richard	Chief Technologist	613-548-6630	Mycology	FLU	RL	MOH	KIN
Eng, Mr. Richard	Chief Technologist	613-548-6630	Mycology	PC	RL	MOH	KIN
Freitag, Mr. Randy	Chief Technologist	416-235-5723	Virology - Diagnostic	CULTURE	LSB	MOH	TOR
Freitag, Mr. Randy	Chief Technologist	416-235-5723	Virology - Diagnostic	OM	LSB	MOH	TOR
Freitag, Mr. Randy	Chief Technologist	416-235-5723	Virology - Diagnostic	ELISA	LSB	MOH	TOR
Freitag, Mr. Randy	Chief Technologist	416-235-5723	Virology - Diagnostic	ST	LSB	MOH	TOR
Galli, Mr. Rick	Administrative Technologist	416-235-5727	HIV	CULTURE	LSB	MOH	TOR
Galli, Mr. Rick	Administrative Technologist	416-235-5727	HIV	WB	LSB	MOH	TOR
Galli, Mr. Rick	Administrative Technologist	416-235-5727	HIV	ELISA	LSB	MOH	TOR
George, Mrs, Pauline	Head Technologist,	416-235-5994	Virology - EBV & Rabies	IF	LSB	MOH	TOR
George, Mrs, Pauline	Head Technologist,	416-235-5994	Virology - EBV & Rabies	NUT	LSB	MOH	TOR
Goodwin, Mrs. Doris	Head Technologist,	416-235-5729	Virology - Hepatitis (A,B)	EIA	LSB	MOH	TOR
Goodwin, Mrs. Doris	Head Technologist,	416-235-5729	Virology - Hepatitis (A,B)	RIA	LSB	MOH	TOR
Guglielmi, Mrs. Eileen	Head Technologist,	416-235-5730	Virology - Isolation	CULTURE	LSB	MOH	TOR
Guglielmi, Mrs. Eileen	Head Technologist,	416-235-5730	Virology - Isolation	OM	LSB	MOH	TOR
Guglielmi, Mrs. Eileen	Head Technologist,	416-235-5730	Virology - Isolation	ST	LSB	MOH	TOR
Guglielmi, Mrs. Eileen	Head Technologist,	416-235-5730	Virology - Isolation	ELISA	LSB	MOH	TOR
Guglielmi, Mrs. Eileen	Head Technologist,	416-235-5730	Virology - Isolation	IF	LSB	MOH	TOR
Haddad, Mr. Albert	Head Technologist	416-235-6040	Mycobacteriology	HPLC	LSB	MOH	TOR
Haddad, Mr. Albert	Head Technologist	416-235-6040	Mycobacteriology	DSL	LSB	MOH	TOR
Haddad, Mr. Albert	Head Technologist	416-235-6040	Mycobacteriology	DNA Hyb	LSB	MOH	TOR
Haddad, Mr. Albert	Head Technologist	416-235-6040	Mycobacteriology	BACTEC (ISO)	LSB	MOH	TOR
Harcourt, Mrs. Twyla	Head Technologist,	705-743-6811	Bacteriology - Environmental	OM(FLU)	RL	MOH	PET
Harcourt, Mrs. Twyla	Head Technologist,	705-743-6811	Bacteriology - Environmental	CULTURE	RL	MOH	PET

NAME	POSITION	TEL NUMBER	AREA OF SPECIALIZATION	TECHNIQUE	BRA	MIN	LOC
Harcourt, Mrs. Twyla	Head Technologist,	705-743-6811	Chlamydia	EIA	RL	MOH	PET
Harcourt, Mrs. Twyla	Head Technologist,	705-743-6811	Chlamydia	CULTURE	RL	MOH	PET
Harcourt, Mrs. Twyla	Head Technologist,	705-743-6811	Serology - Syphilis, Hepatitis, Rubella	EIA	RL	MOH	PET
Harcourt, Mrs. Twyla	Head Technologist,	705-743-6811	Serology - Syphilis, Hepatitis, Rubella	AGG	RL	MOH	PET
Harnett Dr. Norma	Research Scientist	416-235-6093	Bacteriology-Clinical	ELE	LSB	MOH	TOR
Harnett Dr. Norma	Research Scientist	416-235-6093	Bacteriology-Clinical	HYB	LSB	MOH	TOR
Harnett Dr. Norma	Research Scientist	416-235-6093	Bacteriology-Clinical	DNA Seq	LSB	MOH	TOR
Harnett Dr. Norma	Research Scientist	416-235-6093	Bacteriology-Clinical	MG	LSB	MOH	TOR
Harnett Dr. Norma	Research Scientist	416-235-6093	Bacteriology-Clinical	PCR	LSB	MOH	TOR
Hawke, Mr. Ronald	Head Technologist,	519-343-3102	Parasitology	PC	EL	MOH	PAL
Hawke, Mr. Ronald	Head Technologist,	519-343-3102	Parasitiology	FLU	RL	MOH	PAL
Hawke, Mr. Ronald	Head Technologist,	519-343-3102	Parasitology	OM	RL	MOH	PAL
Hawke, Mr. Ronald	Head Technologist,	519-343-3102	Bacteriology - Clinical	FLU	RL	MOH	PAL
Hawke, Mr. Ronald	Head Technologist,	519-343-3102	Bacteriology - Clinical, Environmental	OM	RL	MOH	PAL
Hawke, Mr. Ronald	Head Technologist,	519-343-3102	Bacteriology - Clinical, Environmental	CULTURE	RL	MOH	PAL
Hawke, Mr. Ronald	Head Technologist,	519-343-3102	Bacteriology - Clinical, Environmental	MP	RL	MOH	PAL
Hawke, Mr. Ronald	Head Technologist,	519-343-3102	Serology	AGG	RL	MOH	PAL
Headley, Mr. Carol	Scientist	416-235-5705	Bacteriology - Anaerobes	AIN	LSB	MOH	TOR
Headley, Mr. Carol	Scientist	416-235-5705	Bacteriology - Anaerobes	ID	LSB	MOH	TOR
Headley, Mr. Carol	Scientist	416-235-5705	Bacteriology	DTA	LSB	MOH	TOR
Headley, Mr. Carol	Scientist	416-235-5705	Bacteriology - Anaerobes	GC	LSB	MOH	TOR
Hodge, Ms. Donna	Director	705-325-7449	Bacteriology-Campylobact./Helicobact.	CULTURE	RL	MOH	ORI
Hodge, Ms. Donna	Director	705-325-7449	Bacteriology-Campylobact./Helicobact.	ID	RL	MOH	ORI
Hooke, Mrs. Helen	Head Technologist,	807-622-6449	Serology,	ELISA	RL	MOH	TB
Hooke, Mrs. Helen	Head Technologist,	807-622-6449	Serology	AGG	RL	MOH	TB
Hooke, Mrs. Helen	Head Technologist,	807-622-6449	Virology	OM (FLU)	RL	MOH	TB
Hooke, Mrs. Helen	Head Technologist,	807-622-6449	Virology	CULTURE	RL	MOH	TB
Hooke, Mrs. Helen	Head Technologist,	807-622-6449	Virology	ELISA	RL	MOH	TB
Hooke, Mrs. Helen	Head Technologist,	807-622-6449	Virology	EM	RL	MOH	TB
Howes, Ms. Mary	Chief of Section	416-235-5993	Mycobacteriology	BACTEC (ISO)	LSB	MOH	TOR
Howes, Ms. Mary	Chief of Section	416-235-5993	Mycobacteriology	DNA Hyb	LSB	MOH	TOR

NAME	POSITION	TEL NUMBER	AREA OF SPECIALIZATION	TECHNIQUE	BRA	MIN	LOC
Howes, Ms. Mary	Chief of Section	416-235-5993	Mycobacteriology	ID	LSB	MOH	TOR
Howes, Ms. Mary	Chief of Section	416-235-5993	Mycobacteriology	DRS	LSB	MOH	TOR
Jackson, Dr. Susan	Director	416-385-5379	Microbiology - Gastroenteritis	ELISA	RL	MOH	HAM
Jackson, Dr. Susan	Director	416-385-5379	Microbiology	TC	RL	MOH	HAM
Jackson, Dr. Susan	Director	416-385-5379	Microbiology - Food-borne Diseases	IMC	RL	MOH	HAM
Jessop, Mr. John H.	Director	705-254-7132	Bacteriology - Environmental	TA	RL	MOH	HAM
Jessop, Mr. John H.	Director	705-254-7132	Microbiology - Clinical	CULTURE	RL	MOH	SSM
Jordan, Mr. Garry	Head Technologist,	613-736-6800	Microbiology - Clinical	CULTURE	RL	MOH	SSM
Jordan, Mr. Garry	Head Technologist,	613-736-6800	Bacteriology - Environmental	ST	RL	MOH	SSM
Kajioka, Dr. Robert	Scientist	416-235-5940	Bacteriology - Environmental	CULTURE	LSB	MOH	OTT
Kajioka, Dr. Robert	Scientist	416-235-5940	Bacteriology-Clinical	OM	LSB	MOH	OTT
Kajioka, Dr. Robert	Scientist	416-235-5940	Bacteriology-Clinical	MG	LSB	MOH	TOR
Kasatiya, Dr. Shanti	Director	613-736-6800	Bacteriology-Clinical	MS	LSB	MOH	TOR
Knelsen, Mr. Bernhard	Head Technologist,	613-736-6800	Microbiology	AI	LSB	MOH	TOR
Knelsen, Mr. Bernhard	Head Technologist,	613-736-6800	Bacteriology - Clinical	MD	RL	MOH	OTT
Knelsen, Mr. Bernhard	Head Technologist,	613-736-6800	Bacteriology - Clinical	CULTURE	RL	MOH	OTT
Knelsen, Mr. Bernhard	Head Technologist,	613-736-6800	Bacteriology - Clinical	OM	RL	MOH	OTT
Krishnan, Dr. C.	Medical Bacteriologist	416-235-5712	Bacteriology - Clinical	FLU	RL	MOH	OTT
Krishnan, Dr. C.	Medical Bacteriologist	416-235-5712	Bacteriology - Clinical	PC	RL	MOH	OTT
Krishnan, Dr. C.	Medical Bacteriologist	416-235-5712	Bacteriology - Clinical	CII	LSB	MOH	TOR
Kubala, Dr. Teresa	Senior Analyst	416-235-5929	Pharmaceutical Analysis	IF	LSB	MOH	TOR
Kubala, Dr. Teresa	Senior Analyst	416-235-5929	Pharmaceutical Analysis	ELISA	LSB	MOH	TOR
Kubala, Dr. Teresa	Senior Analyst	416-235-5929	Pharmaceutical Analysis	GC	DPB	MOH	REX
Kubala, Dr. Teresa	Senior Analyst	416-235-5929	Pharmaceutical Analysis	HPLC	DPB	MOH	REX
Kubala, Dr. Teresa	Senior Analyst	416-235-5929	Pharmaceutical Analysis	IR	DPB	MOH	REX
Kubala, Dr. Teresa	Senior Analyst	416-235-5929	Pharmaceutical Analysis	TLC	DPB	MOH	REX
Lee, Mr. Yeong	Head Technologist	416-235-5703	Neonatal-hTSH	UV	DPB	MOH	REX
Lo, Dr. Ching Y.	Senior Scientist	416-235-5715	Serology	OS	DPB	MOH	REX
Lo, Dr. Ching Y.	Senior Scientist	416-235-5715	Serology	DEL	LSB	MOH	TOR
				IF	LSB	MOH	TOR
				ELISA	LSB	MOH	TOR

NAME	POSITION	TEL NUMBER	AREA OF SPECIALIZATION	TECHNIQUE	BRA	MIN	LOC
Lo, Dr. Ching Y.	Senior Scientist	416-235-5715	Serology	WB	LSB	MOH	TOR
Lo, Dr. Ching Y.	Senior Scientist	416-235-5715	Serology	ANTIGEN (P&P)	LSB	MOH	TOR
Lo, Dr. Ching Y.	Senior Scientist	416-235-5715	Serology	ANTIBODY (P&P)	LSB	MOH	TOR
Lo, Mr. Ho	Head Technol, Spec.Proc.	416-235-5705	Bacteriology	PF	LSB	MOH	TOR
Lo, Mr. Ho	Head Technol, Spec.Proc.	416-235-5705	Bacteriology	ELISA	LSB	MOH	TOR
Lo, Mr. Ho	Head Technol, Spec.Proc.	416-235-5705	Bacteriology - Phenyketonuria	BA (PKU)	LSB	MOH	TOR
Lo, Mr. Ho	Head Technol, Spec.Proc.	416-235-5705	Bacteriology	FDR	LSB	MOH	TOR
Lo, Mr. Ho	Head Technol, Spec.Proc.	416-235-5705	Bacteriology	PT	LSB	MOH	TOR
Lo, Mr. Ho	Head Technol, Spec.Proc.	416-235-5705	Bacteriology	TC	LSB	MOH	TOR
Lo, Mr. Ho	Head Technol, Spec.Proc.	416-235-5705	Bacteriology	TA	LSB	MOH	TOR
MacDonald, Mrs. B.	Head Technologist	705-267-6633	Bacteriology - Environmental	CULTURE	RL	MOH	TOR
MacDonald, Mrs. B.	Head Technologist	705-267-6633	Serology	ELISA	RL	MOH	TOR
Mahdy, Dr. Mohamed	Chief, Spec. Pathogens	416-2355-5766	Virology - Exotic Pathogens	CULTURE	LSB	MOH	TOR
Mahdy, Dr. Mohamed	Chief, Spec. Pathogens	416-2355-5766	Virology - Exotic Pathogens	SEROLOGY	LSB	MOH	TOR
Mahdy, Dr. Mohamed	Chief, Spec. Pathogens	416-2355-5766	Virology - Arbovirus Rickettsia	CULTURE	LSB	MOH	TOR
Mahdy, Dr. Mohamed	Chief, Spec. Pathogens	416-2355-5766	Virology - Arbovirus Rickettsia	SEROLOGY	LSB	MOH	TOR
Mahdy, Dr. Mohamed	Chief, Spec. Pathogens	416-2355-5766	Virology - High Hazard Containment	CLASS 4 FACILITY	LSB	MOH	TOR
Mallory, Mr. Carroll	Director	519-343-3102	Microbiology-Clinical, Environmental	CULTURE	RL	MOH	PAL
Mallory, Mr. Carroll	Director	519-343-3102	Microbiology-Clinical, Environmental	OM	RL	MOH	PAL
Mallory, Mr. Carroll	Director	519-343-3102	Microbiology-Clinical, Environmental	MP	RL	MOH	PAL
Mallory, Mr. Carroll	Director	519-343-3102	Chlamydia	CULTURE	RL	MOH	PAL
Mallory, Mr. Carroll	Director	519-343-3102	Chlamydia	FLU	RL	MOH	PAL
McLeod, Mrs. Sheila	Head Techn.(Enteric.)	416-235-5708	Bacteriology-Clinical	GC	LSB	MOH	TOR
McLeod, Mrs. Sheila	Head Techn.(Enteric.)	416-235-5708	Bacteriology - C. difficile	CULTURE	LSB	MOH	TOR
McLeod, Mrs. Sheila	Head Techn.(Enteric.)	416-235-5708	Bacteriology - C. difficile	ID	LSB	MOH	TOR
Mills, Miss Loris	Head Technologist,	519-969-4341	Bacteriology - Clinical	CULTURE	RL	MOH	WIN
Mills, Miss Loris	Head Technologist,	519-969-4341	Bacteriology - Clinical	OM	RL	MOH	WIN
Mills, Miss Loris	Head Technologist,	519-969-4341	Bacteriology - Clinical	FLU	RL	MOH	WIN
Mills, Miss Loris	Head Technologist,	519-969-4341	Bacteriology - Clinical	GC	RL	MOH	WIN
Mills, Miss Loris	Head Technologist,	519-969-4341	Mycology	CULTURE	RL	MOH	WIN
Mills, Miss Loris	Head Technologist,	519-969-4341	Mycology	OM	RL	MOH	WIN

NAME	POSITION	TEL NUMBER	AREA OF SPECIALIZATION	TECHNIQUE	BRA	MIN	LOC
Mills, Miss Loris	Head Technologist,	519-969-4341	Mycology	PC	RL	MOH	WIN
Mills, Miss Loris	Head Technologist,	519-969-4341	Parasitology	OM	RL	MOH	WIN
Mills, Miss Loris	Head Technologist,	519-969-4341	Parasitology	PC	RL	MOH	WIN
Nicholas, Mr. Keith	Technologist,	416-235-5925	Virology - Hepatitis B,C,D	RIA	LSB	MOH	TOR
Nicholas, Mr. Keith	Technologist,	416-235-5925	Virology - Hepatitis B,C,D	ELISA	LSB	MOH	TOR
Nicholas, Mr. Keith	Technologist,	416-235-5925	Virology - Hepatitis B,C,D	DNA Hyb	LSB	MOH	TOR
Notenboom, Dr. R.	Chief of Section	416-235-5714	Serology	IMC	LSB	MOH	TOR
Odorico, Mr. Gerald	Head Technologist,	416-385-5379	Serology	AGG	RL	MOH	HAM
Odorico, Mr. Gerald	Head Technologist,	416-385-5379	Serology	ELISA	RL	MOH	HAM
Odorico, Mr. Gerald	Head Technologist,	416-385-5379	Bacteriology - Environmental	CULTURE	RL	MOH	HAM
Odorico, Mr. Gerald	Head Technologist,	416-385-5379	Bacteriology - Environmental	OM	RL	MOH	HAM
O'Grady, Mr. Martin	Head Technologist,	705-267-6633	Mycology,	OM (FLU)	RL	MOH	TIM
O'Grady, Mr. Martin	Head Technologist,	705-267-6633	Mycology	CULTURE	RL	MOH	TIM
O'Grady, Mr. Martin	Head Technologist,	705-267-6633	Parasitology	OM	RL	MOH	TIM
O'Grady, Mr. Martin	Head Technologist,	705-267-6633	Parasitology	PC	RL	MOH	TIM
O'Grady, Mr. Martin	Head Technologist,	705-267-6633	Bacteriology, Clinical	CULTURE	RL	MOH	TIM
O'Grady, Mr. Martin	Head Technologist,	705-267-6633	Bacteriology, Clinical	OM (FLU)	RL	MOH	TIM
O'Grady, Mr. Martin	Head Technologist,	705-267-6633	Virology	CULTURE	RL	MOH	TIM
O'Grady, Mr. Martin	Head Technologist,	705-267-6633	Virology	OM(FLU)	RL	MOH	TIM
Orchard, Mrs. Tina	Head Technologist,	416-235-5728	Virology - Serology	ELISA	LSB	MOH	TOR
Orchard, Mrs. Tina	Head Technologist,	416-235-5728	Virology - Serology	CF	LSB	MOH	TOR
Orchard, Mrs. Tina	Head Technologist,	416-235-5728	Virology - Serology	IGM	LSB	MOH	TOR
Orchard, Mrs. Tina	Head Technologist,	416-235-5728	Virology - Serology	IGG	LSB	MOH	TOR
Parks, Mr. Ted	Head Technologist,	416-235-5715	Serology	NEPH	LSB	MOH	TOR
Parks, Mr. Ted	Head Technologist,	416-235-5715	Serology	ELISA	LSB	MOH	TOR
Paul, Mr. Nick	Director	519-969-4341	Laboratory Biosafety		RL	MOH	WIN
Paul, Mr. Nick	Director	519-969-4341	Microbiology	GC	RL	MOH	WIN
Paul, Mr. Nick	Director	519-969-4341	Virology	EM	RL	MOH	WIN
Paul, Mr. Nick	Director	519-969-4341	Virology	CULTURE	RL	MOH	WIN
Paul, Mr. Nick	Director	519-969-4341	Virology	ELISA	RL	MOH	WIN
Pires, Ms. Clara	Antisera Production	416-235-5705	Bacteriology	AIN	LSB	MOH	TOR

NAME	POSITION	TEL NUMBER	AREA OF SPECIALIZATION	TECHNIQUE	BRA	MIN	LOC
Pires, Ms. Clara	Antisera Production	416-235-5705	Bacteriology	ST	LSB	MOH	TOR
Pires, Ms. Clara	Antisera Production	416-235-5705	Bacteriology	AGG	LSB	MOH	TOR
Pires, Ms. Clara	Antisera Production	416-235-5705	Bacteriology	IGG	LSB	MOH	TOR
Pires, Ms. Clara	Antisera Production	416-235-5705	Bacteriology	IGM	LSB	MOH	TOR
Pires, Ms. Clara	Antisera Production	416-235-5705	Bacteriology	MD	LSB	MOH	TOR
Preston, Dr. Martin	Scientist	416-235-5709	Bacteriology - Clinical	ELE	LSB	MOH	TOR
Preston, Dr. Martin	Scientist	416-235-5709	Bacteriology - Clinical	REA	LSB	MOH	TOR
Preston, Dr. Martin	Scientist	416-235-5709	Bacteriology - Clinical	MG	LSB	MOH	TOR
Preston, Dr. Martin	Scientist	416-235-5709	Bacteriology - Clinical	LPS	LSB	MOH	TOR
Preston, Dr. Martin	Scientist	416-235-5709	Bacteriology - Clinical	PLA	LSB	MOH	TOR
Preston, Dr. Martin	Scientist	416-235-5709	Bacteriology - Clinical	PRA	LSB	MOH	TOR
Riley, Mr. Garth	Chief Technologist	416-235-5706	Bacteriology - Clinical	MP	LSB	MOH	TOR
Riley, Mr. Garth	Chief Technologist	416-235-5706	Bacteriology - Clinical	QC	LSB	MOH	TOR
Riley, Mr. Garth	Chief Technologist	416-235-5706	Bacteriology - Clinical	CULTURE	LSB	MOH	TOR
Riley, Mr. Garth	Chief Technologist	416-235-5706	Bacteriology - Clinical	OS	LSB	MOH	TOR
Rundans, Miss Ruta	Head Technologist,	613-548-6630	Bacteriology - Environmental, Food	CULTURE	RL	MOH	KIN
Rundans, Miss Ruta	Head Technologist,	613-548-6630	Bacteriology - Environmental, Food	OM	RL	MOH	KIN
Salmon, Mr. Larry	Head Technologist,	807-622-6449	Mycology	CULTURE	RL	MOH	TB
Salmon, Mr. Larry	Head Technologist,	807-622-6449	Mycology	OM	RL	MOH	TB
Salmon, Mr. Larry	Head Technologist,	807-622-6449	Mycology	PC	RL	MOH	TB
Salmon, Mr. Larry	Head Technologist,	807-622-6449	Bacteriology - Clinical	CULTURE	RL	MOH	TB
Salmon, Mr. Larry	Head Technologist,	807-622-6449	Bacteriology - Clinical	OM	RL	MOH	TB
Salmon, Mr. Larry	Head Technologist,	807-622-6449	Bacteriology - Clinical	FLU	RL	MOH	TB
Salmon, Mr. Larry	Head Technologist,	807-622-6449	Parasitology	OM	RL	MOH	TB
Salmon, Mr. Larry	Head Technologist,	807-622-6449	Parasitology	PC	RL	MOH	TB
Sankar-Mistry, Dr. P.	Head Technologist,	613-736-6800	Virology	CULTURE	RL	MOH	OTT
Sankar-Mistry, Dr. P.	Head Technologist,	613-736-6800	Virology	ELISA	RL	MOH	OTT
Sankar-Mistry, Dr. P.	Head Technologist,	613-736-6800	Serology, Hepatitis, HIV, Syphilis	ELISA	RL	MOH	OTT
Sankar-Mistry, Dr. P.	Head Technologist,	613-736-6800	Serology, Hepatitis, HIV, Syphilis	AGG	RL	MOH	OTT
Scholten, Dr. T.	Chief of Section	416-235-5722	Parasitology - Medical Entomology	OM	LSB	MOH	TOR
Scholten, Dr. T.	Chief of Section	416-235-5722	Parasitology - Blood & Tissue Parasites	OM	LSB	MOH	TOR

NAME	POSITION	TEL NUMBER	AREA OF SPECIALIZATION	TECHNIQUE	BRA	MIN	LOC
Scholten, Dr. T.	Chief of Section	416-235-5722	Parasitology - Blood & Tissue Parasites	IMC	LSB	MOH	TOR
Smith, Mr. Donald	Head Technologist,	705-743-6811	Bacteriology - Clinical	CULTURE	RL	MOH	PET
Smith, Mr. Donald	Head Technologist,	705-743-6811	Bacteriology - Clinical	OM	RL	MOH	PET
Smith, Mr. Donald	Head Technologist,	705-743-6811	Bacteriology - Clinical	FLU	RL	MOH	PET
Smith, Mr. Donald	Head Technologist,	705-743-6811	Parasitology	OM	RL	MOH	PET
Smith, Mr. Donald	Head Technologist,	705-743-6811	Mycology	CULTURE	RL	MOH	PET
Smith, Mr. Donald	Head Technologist,	705-743-6811	Mycology	OM	RL	MOH	PET
Smitka, Mrs. Cathy	Scientist	416-235-5715	Serology	MD	LSB	MOH	TOR
Subrahmanyan, Dr. T.	Director	613-548-6630	Virology	CULTURE	RL	MOH	KIN
Subrahmanyan, Dr. T.	Director	613-548-6630	Virology	ELISA	RL	MOH	KIN
Subrahmanyan, Dr. T.	Director	613-548-6630	Virology	CF	RL	MOH	KIN
Summerbell, Dr. R.	Chief of Section	416-235-5720	Mycology - Environmental, Medical	CULTURE	LSB	MOH	TOR
Summerbell, Dr. R.	Chief of Section	416-235-5720	Mycology - Environmental, Medical	OM	LSB	MOH	TOR
Summerbell, Dr. R.	Chief of Section	416-235-5720	Mycology - Environmental, Medical	ID	LSB	MOH	TOR
Tang, Mr. Patrick	Head Techn.Legionr.Disease	416-235-5710	Bacteriology - Legionella	ELISA	LSB	MOH	TOR
Tang, Mr. Patrick	Head Techn.Legionr.Disease	416-235-5710	Bacteriology - Legionella	IF	LSB	MOH	TOR
Tang, Mr. Patrick	Head Techn.Legionr.Disease	416-235-5710	Bacteriology - Legionella	CULTURE	LSB	MOH	TOR
Tang, Mr. Patrick	Head Techn.Legionr.Disease	416-235-5710	Bacteriology - Legionella	ID	LSB	MOH	TOR
Terro, Mr. Robert	Head Techn. STD	416-235-5704	Bacteriology-Clinical N. gonorrhoeae	OM (FLU)	LSB	MOH	TOR
Terro, Mr. Robert	Head Techn. STD	416-235-5704	Bacteriology-Clinical N. gonorrhoeae	AGG (Co)	LSB	MOH	TOR
Thompson, Mr. J.S.	Director	705-743-6811	Virology	CULTURE	RL	MOH	PET
Thompson, Mr. J.S.	Director	705-743-6811	Virology	ELISA	RL	MOH	PET
Thompson, Mr. J.S.	Director	705-743-6811	Bacteriology	CULTURE	RL	MOH	PET
Thompson, Mr. J.S.	Director	705-743-6811	Bacteriology	OM	RL	MOH	PET
Thompson, Mr. J.S.	Director	705-743-6811	Bacteriology	FLU	RL	MOH	PET
Thompson, Mr. J.S.	Director	705-743-6811	Bacteriology	PC	RL	MOH	PET
Thorup, Mr. Robert	Head, Chlamydia	416-235-5733	Virology - Chlamydia	CULTURE	LSB	MOH	TOR
Thorup, Mr. Robert	Head, Chlamydia	416-235-5733	Virology - Chlamydia	ELISA	LSB	MOH	TOR
Thorup, Mr. Robert	Head, Chlamydia	416-235-5733	Virology - Chlamydia	IF	LSB	MOH	TOR
Wang, Dr. Stephen	Scientist	416-235-5702	Biochemistry - Metals	AAS	LSB	MOH	TOR
Wang, Dr. Stephen	Scientist	416-235-5702	Biochemistry - Metals	HPLC	LSB	MOH	TOR

NAME	POSITION	TEL NUMBER	AREA OF SPECIALIZATION	TECHNIQUE	BRA	MIN	LOC
Wang, Dr. Stephen	Scientist	416-235-5702	Biochemistry - Metals	GC	LSB	MOH	TOR
Yu, Mr. Billy	Head Technologist (acting)	416-235-5722	Parasitology	OM	LSB	MOH	TOR
MINISTRY OF LABOUR							
Gaind, Dr. Virindar	Senior scientist (GC)	416-235-5962	Occup.Anal.Chem.	HPLC	OHS	MOL	REX
Gaind, Dr. Virindar	Senior scientist (GC)	416-235-5962	Occup.Anal.Chem.	GC	OHS	MOL	REX
Gaind, Dr. Virindar	Senior scientist (GC)	416-235-5962	Occup.Anal.Chem.	PES	OHS	MOL	REX
Gaind, Dr. Virindar	Senior scientist (GC)	416-235-5962	Occup.Anal.Chem.	GC-MS	OHS	MOL	REX
Gaind, Dr. Virindar	Senior scientist (GC)	416-235-5962	Occup.Anal.Chem.	FLU	OHS	MOL	REX
Gaind, Dr. Virindar	Senior scientist (GC)	416-235-5962	Occup.Anal.Chem.	OS	OHS	MOL	REX
Pang, Tom	Senior scientist (EM/XRD)	416-235-5962	Occup.Anal.Chem.	OM	OHS	MOL	REX
Pang, Tom	Senior scientist (EM/XRD)	416-235-5962	Occup.Anal.Chem.	SEM	OHS	MOL	REX
Pang, Tom	Senior scientist (EM/XRD)	416-235-5962	Occup.Anal.Chem.	XRF	OHS	MOL	REX
Pang, Tom	Senior scientist (EM/XRD)	416-235-5962	Occup.Anal.Chem.	EM	OHS	MOL	REX
Pang, Tom	Senior scientist (EM/XRD)	416-235-5962	Occup.Anal.Chem.	XRD	OHS	MOL	REX
Smith, Roy	Senior scientist (IR/ES)	416-235-5962	Occup.Anal.Chem.	IC	OHS	MOL	REX
Smith, Roy	Senior scientist (IR/ES)	416-235-5962	Occup.Anal.Chem.	ICP	OHS	MOL	REX
Smith, Roy	Senior scientist (IR/ES)	416-235-5962	Occup.Anal.Chem.	UV	OHS	MOL	REX
Smith, Roy	Senior scientist (IR/ES)	416-235-5962	Occup.Anal.Chem.	IR	OHS	MOL	REX
Smith, Roy	Senior scientist (IR/ES)	416-235-5962	Occup.Anal.Chem.	FT-IR	OHS	MOL	REX
Walkinshaw, Ian	Senior scientist (AAS)	416-235-5962	Occup.Anal.Chem.	AAS(C,F,G,H)	OHS	MOL	REX
Walkinshaw, Ian	Senior scientist (AAS)	416-235-5962	Occup.Anal.Chem.	POL	OHS	MOL	REX
Gilmer, Ken	Sup. Radiological Surveillance	416-235-5916	Radiochemical Analysis	RC (alpha, beta, gamm	OHS	MOL	REX
McFadden, Robert	Sup. Ionizing Radiation	416-235-5923	X-Ray Radiation	XR	OHS	MOL	REX
Bitran, Maurice	Sup. Non-Ionizing Radiation	416-235-6044	Non-Ionizing Radiation	NIR	OHS	MOL	REX
Lee, Jim	Sup. Research & Development	416-235-5914	Radiochemical Instrumentation	RD (alpha, beta, gamm	OHS	MOL	REX
Baker, Ernie	A/Sup. Environ. Radioactivity	416-235-5921	Environmental Radioactiviy	RD (Environmental)	OHS	MOL	REX

NAME	POSITION	TEL NUMBER	AREA OF SPECIALIZATION	TECHNIQUE	BRA	MIN	LOC
MINISTRY OF TRANSPORTATION							
Chow, S.M.	Chemist	416-235-3687	Inorganic Chemistry		EMO	MOT	DOW
Devata, Murty	Chief Foundation Engineer	416-235-3731	Foundation Design		EMO	MOT	DOW
Devata, Murty	Chief Foundation Engineer	416-235-3731	Geotechnical Engineering		EMO	MOT	DOW
Devata, Murty	Chief Foundation Engineer	416-235-3731	Soil Mechanics		EMO	MOT	DOW
Dickson, Dr. John H.	Chief Bituminous Testing	416-235-3718	Bituminous Materials Testing	FLA	EMO	MOT	DOW
Komarnicki, Walter	Head, Chemicals Section	416-235-3727	Chemical Engineering		EMO	MOT	DOW
Lynch, Dan	Head, Bituminous Section	416-235-3725	Bituminous Technology		EMO	MOT	DOW
Ridley, G.	Chemical Engineer	416-235-3728	Protective Coatings		EMO	MOT	DOW
Ridley, G.	Chemical Engineer	416-235-3728	Traffic Paint		EMO	MOT	DOW
Rogers, C.A.	Head,Soils and Aggregates	416-235-3734	Mineralogy		EMO	MOT	DOW
Schell, Hannah	Head, Concrete Section	416-235-3708	Concrete		EMO	MOT	DOW
Schell, Hannah	Head, Concrete Section	416-235-3708	Corrosion		EMO	MOT	DOW
Tam, Dr. Kai	Senior Bituminous Engineer	416-235-3734	Bituminous Evaluation		EMO	MOT	DOW
MINISTRY OF THE SOLICITOR GENERAL							
Crocker, Jim	Scientist	416-965-9273	Hair & Fiber Analysis	OM	CFS	MSG	TOR
Blunt, Lorne	Section Head, Photoanalysis	416-965-4721	Photography	PHOTOANALYSIS	CFS	MSG	TOR
Dawson, Greg	Section Head/Documents	416-965-4721	Questioned Docs/Handwriting Analysis	OM	CFS	MSG	TOR
Dixon, Brian	Asst Section Head/Chemistry	416-965-9278	Glass Analysis/Analyt.Chemist	GC	CFS	MSG	TOR
Erickson, Norman	Section Head, Biology	416-965-9273	Blood Grouping	ELP	CFS	MSG	TOR
Erickson, Norman	Section Head, Biology	416-965-9273	Hair Analysis	OM	CFS	MSG	TOR
Erickson, Norman	Section Head, Biology	416-965-9273	Fibre Analysis	OM	CFS	MSG	TOR
Graves, Bill	Scientist	416-965-9278	Soil Analysis	OM	CFS	MSG	TOR
Hallett, Ron	Assist Section Head/Toxic	416-965-9507	Alcoh.Analysis/Breath Test.	BRE	CFS	MSG	TOR
Hall, David	Assist.Section Head/Toxicol	416-965-9507	Analytical Toxicology	UV	CFS	MSG	TOR
Hall, David	Assist.Section Head/Toxicol	416-965-9507	Analytical Toxicology	TLC	CFS	MSG	TOR
Johnston, Kimberly	Assit Section Head/Biology	416-965-9273	Blood Grouping	ELP	CFS	MSG	TOR
Koves, Eva	Research Scientist	416-965-9507	Analytical Toxicology	GC	CFS	MSG	TOR
Koves, Eva	Research Scientist	416-965-9507	Analytical Toxicology	HPLC	CFS	MSG	TOR
Koves, George	Research Scientist	416-965-9507	Analyt. Toxic.Synthetic Org.Chem	GC-MS	CFS	MSG	TOR

NAME	POSITION	TEL NUMBER	AREA OF SPECIALIZATION	TECHNIQUE	BRA	MIN	LOC
Koves, George	Research Scientist	416-965-9507	Analyt. Toxic.Synthetic Org.Chem	GC	CFS	MSG	TOR
Li, Alan	Scientist	416-965-9278	Electron Microscopy	SEM	CFS	MSG	TOR
Mayer, Joel	Section Head/Toxicology	416-965-9507	Analytical Toxicol/Pharmacol	GC	CFS	MSG	TOR
Mustard, John	Scientist	416-965-9278	Engineering		CFS	MSG	TOR
Newall, Pam	Scientist	416-965-9273	DNA Profiling	ELP	CFS	MSG	TOR
Newbury, Louisa	Asst. Section Head, Chemistry	416-965-9278	Paint	AAS	CFS	MSG	TOR
Newbury, Louisa	Asst. Section Head, Chemistry	416-965-9278	Gunshot Residues	GC	CFS	MSG	TOR
Newbury, Louisa	Asst. Section Head, Chemistry	416-965-9278	Gunshot Residues	XRD	CFS	MSG	TOR
Nielsen, Finn	Section Head/Firearms	416-965-9276	Ballistics/Firearms	OM	CFS	MSG	TOR
Pausak, Steve	Scientist	416-965-9278	Voice & Electronics Analysis	OSC	CFS	MSG	TOR
Philp, Mike	Asst. Section Head, Biology	416-965-9273	Blood Grouping	ELP	CFS	MSG	TOR
Philp, Mike	Asst. Section Head, Biology	416-965-9273	Blood Grouping	ELISA	CFS	MSG	TOR
Prime, Ray	Section Head/Chemistry	416-965-9278	Arson & Explosives	FT-IR	CFS	MSG	TOR
Prime, Ray	Section Head/Chemistry	416-965-9278	Arson & Explosives	GC	CFS	MSG	TOR
Wells, John	Manager, N. Regional Lab	705-945-6552	Forensic Science Services		RL	MSG	SSM
MINISTRY OF NORTHERN DEVELOPMENT AND MINES							
Beneteau, Steven	Technician	416-965-1337	Geoanalysis	ICP(MS)	OGS	NDM	TOR
Crabtree, David	Mineral Sciences Technician	416-965-1337	Precious Metal Fire Assay	FA	OGS	NDM	TOR
de Souza, Dr. Hugh	A/Superv. Mineral Sciences	416-965-1337	Mineralogy/Petrology/Microanalysis	XRD	OGS	NDM	TOR
de Souza, Dr. Hugh	A/Superv. Mineral Sciences	416-965-1337	Mineralogy/Petrology/Microanalysis	EM	OGS	NDM	TOR
Doherty, Will	Scientist	416-965-1337	Geoanalysis	ICP(MS)	OGS	NDM	TOR
Henri, Gilles	Technician	416-965-1337	Geoanalysis	ICP-OES	OGS	NDM	TOR
Hodges, A.E.	A/Supervisor Chemistry	416-965-1337	Analytical Chemistry	AAS(F,G,H)	OGS	NDM	TOR
Lightfoot, Dr. Peter	A/Chief Geoscience Labs	416-965-1337	Isotope & Trace element Analysis	EM	OGS	NDM	TOR
Lightfoot, Dr. Peter	A/Chief Geoscience Labs	416-965-1337	Isotope & Trace element Analysis	MS(TI)	OGS	NDM	TOR
McAndrew, Jack	Technician	705-649-8313	Bulk Sampling/Assaying	FA	TTL	NDM	COB
McAndrew, Jack	Technician	705-649-8313	Bulk Sampling/Assaying	AAS	TTL	NDM	COB
Richardson, Dr. Jean M.	Supervisor Spectroscopy	416-965-1337	Geoanalysis	ICP-MS	OGS	NDM	TOR

FORM FOR ADDITIONAL ENTRIES TO DATABASE OF LABORATORY CONTACTS

NAME	1.	4.
POSITION		
TELEPHONE NUMBER		
AREA OF SPECIALIZATION		
ANALYTICAL TECHNIQUE		
BRANCH		
MINISTRY		
LOCATION		
NAME	2.	5.
POSITION		
TELEPHONE NUMBER		
AREA OF SPECIALIZATION		
ANALYTICAL TECHNIQUE		
BRANCH		
MINISTRY		
LOCATION		
NAME	3.	6.
POSITION		
TELEPHONE NUMBER		
AREA OF SPECIALIZATION		
ANALYTICAL TECHNIQUE		
BRANCH		
MINISTRY		
LOCATION		

RECORD OF ERRORS, INCONSISTENCIES AND/OR OMISSIONS IN THE 1992 INDEX OF ANALYTICAL LABORATORIES AND CONTACT POINTS

FROM: _____

_____

_____

Phone: _____

FAX: _____

COMMENTS

Please return to:
Dr. Chris Riddle, Secretary, Analytical Laboratories Council, Management Board of Cabinet, 6th Floor, Frost Building South, Queen's Park, Toronto, Ontario M7A 1Z6.

ANALYTICAL LABORATORIES COUNCIL

CONTACTS DATABASE USING LOTUS 1-2-3® AGREEMENT

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Signature: _____ Date: _____

Send to: The Analytical Laboratories Council, c/o Dr. Chris Riddle,
Management Policy Division, Management Board Secretariat
Frost Building South, 6th Floor, Queen's Park, Toronto, Ontario M7A 1Z6